

Water Sharing Plan for the Murray and Lower Darling Regulated Rivers Water Sources

(as amended on 1 July 2004)



Department of
Infrastructure, Planning and Natural Resources

Status

The plan was made on 26 February 2003.

The plan was amended on 1 July 2004.

The plan commenced on 1 July 2004.

Note: This copy of the statutory plan was prepared by the Department of Infrastructure, Planning and Natural Resources based on the version on the government's legislation website www.legislation.com.au on 10 December 2004. It includes the plan amendments gazetted on 1 July 2004. Some further minor clause numbering changes or corrections may be made to the statutory plan at a later date. Therefore for the most up to date version, it will be necessary to check the legislation website to see if a further version has been prepared.

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Part 1 Introduction

1 Name of plan

This Plan is the Water Sharing Plan for the New South Wales Murray and Lower Darling Regulated Rivers Water 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 July 2004 and ceases 10 years after that date.

4 Water sources and waters to which this Plan applies

- (1) The water sources in respect of which this Plan is made shall be known as the New South Wales Murray Regulated River Water Source and the Lower-Darling Regulated River Water Source (hereafter *these water sources*).
- (2) The New South Wales Murray Regulated River Water Source (hereafter *the Murray Water Source*) is that between the banks of all rivers, from the upper limit of Hume Dam water storage, and from the Darling River at the north east corner of Lot 11 DP 756952, Parish of Merche, County of Wentworth, downstream to the South Australian border which, at the date of commencement of this Plan, have been declared by the Minister to be regulated rivers.
- (3) The Lower-Darling Regulated River Water Source (hereafter *the Lower Darling Water Source*) is that between the banks of all rivers, from the upper limit of the Lake Wetherell water storage downstream to the upstream limit of the Wentworth Weir Pool water storage which, at the date of commencement of this Plan, have been declared by the Minister to be regulated rivers.

Note. A regulated river is a river that has been declared by the Minister, by order published in the New South Wales Government Gazette, to be a regulated river.

Note. The regulated rivers referred to in subclauses (2) and (3) are listed in Appendix 1.

- (4) The rivers included in these water sources may be varied under section 45 (1) (b) of the Act as set out in Part 14.
- (5) These water sources are within the Murray Water Management Area as constituted by the Ministerial order published in the NSW Government Gazette (hereafter *the Gazette*) on 23 November 2001.

Note. A diagram of the NSW Murray and Lower Darling region is contained in Appendix 2.

- (6) This Plan applies to the water distributed to New South Wales under Part X of the Murray Darling Basin Agreement.
- (7) This Plan does not apply to water contained within aquifer water sources underlying these water sources or to water on land adjacent to these water sources.

Note. The New South Wales share of the waters of the Murray Regulated River Water Source is subject to the water accounting and other arrangements that arise from the Murray Darling Basin Agreement.

Note. Management of floodplain harvesting will not be a component of individual water sharing plans being produced for the regulated and unregulated rivers. Management of floodplain harvesting will occur according to a number of state-wide management principles, attached in Appendix 3.

5 Interpretation

- (1) Terms that are defined in the Act have the same meaning in this Plan, unless redefined in Schedule 1, and the effect of these terms may be explained in Notes.
- (2) Additional terms are defined in Schedule 1.
- (3) Notes in 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.

6 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 being 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.

7 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 Gazette on 20 December 2002 (hereafter *the SWMOP*).
- (2) Schedule 2 identifies the SWMOP targets applicable to this Plan and how this Plan contributes to meeting these targets.

Part 2 Vision, objectives, strategies and performance indicators

8 Vision, objectives, strategies and performance indicators

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

9 Vision

The vision for this Plan is to achieve a healthy River Murray and Lower Darling system, sustaining communities and preserving unique values.

10 Objectives

The objectives of this Plan are to:

- (a) improve opportunities for natural regeneration and breeding cycles and ecological processes reliant on seasonal patterns, in particular by reinstating more natural wetting and drying cycles,
- (b) increase the connectivity between the river and floodplain during spring and early summer,
- (c) contribute to the maintenance or enhancement of the physical habitats of the river system,
- (d) improve the opportunities for breeding of native fish and other native organisms by encouraging the migration of native fish and allowing access to spawning sites, food sources and improved water quality, including correct thermal conditions,
- (e) promote the recovery of threatened species, populations and ecological communities,
- (f) contribute to expansion and diversification of river bank habitat,
- (g) contribute to maintenance of bank stability,
- (h) assist in maintenance of the ecological health of anabranches and billabongs, particularly for habitat that may not be provided in the main river channel,
- (i) contribute to the maintenance or improvement of water quality to downstream water environments,
- (j) protect basic landholder rights to access water, and
- (k) enhance the viability, sustainability and security of primary and secondary, recreational and tourist industries, and the communities of the Murray-Lower Darling region.

11 Strategies

The strategies for reaching the objectives established in clause 10 are to:

- (a) establish environmental water provisions (Part 3 of this Plan),
- (b) identify water requirements for basic landholder rights (Part 4 of this Plan),
- (c) identify water requirements for access licences (Part 6 of this Plan),
- (d) establish rules for granting of access licences (Part 7 of this Plan),
- (e) establish provisions that place limits on the availability of water (Part 8 of this Plan),

- (f) establish rules for making available water determinations (Part 8 of this Plan),
- (g) establish rules for the operation of water accounts (Part 9 of this Plan),
- (h) establish provisions specifying circumstances under which water may be extracted (Part 9 of this Plan), and
- (i) establish access licence dealing rules (Part 10 of this Plan).

12 Performance indicators

The following indicators are to be used to determine the performance of this Plan against its objectives:

- (a) change in ecological condition of the water source and dependent ecosystems,
- (b) change in low flow regime,
- (c) change in moderate to high flow,
- (d) change in water quality in the water source,
- (e) extent to which domestic and stock rights requirements have been met,
- (f) extent to which local water utility and major utility requirements (where major utilities are involved in urban water provision) have been met,
- (g) change in economic benefits derived from water extraction and use,
- (h) extent of recognition of spiritual, social and customary values of water to Aboriginal people and
- (i) extent to which native title rights have been met.

Note. Appendix 4 details the objectives to which these performance indicators relate and the methods for informing indicators.

Part 3 Environmental water

Note. New South Wales is committed to ongoing negotiations with Victoria, South Australia and the Commonwealth over the development of environmental water provisions for the Murray River.

13 Environmental water provisions

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

14 Planned environmental water

This Plan establishes the following planned environmental water rules:

- (a) water volume in excess of the long-term extraction limits established in clause 31 of this Plan may not be taken from this water source and used for any purpose, and
- (b) water availability is to be managed as specified in clause 33 of this Plan to ensure water volume in excess of the long-term extraction limits is not being taken.

Note. Clauses 14 (a) and 14 (b) contribute to protection of fundamental ecosystem health by ensuring the long-term average volume of water that the environment receives is not eroded by increases in extraction by NSW water users.

15 Planned environmental water

- (1) Subclauses (2) to (16) establish planned environmental water rules relating to the management of the New South Wales' Barmah-Millewa Environmental Water Allowance (hereafter *the Barmah-Millewa Allowance*) in the Murray Water Source.
- (2) A volume of up to 50,000 megalitres per water year shall also be available for release as specified under subclause (7) (hereafter *the Barmah-Millewa Overdraw*).
- (3) An account is to be kept setting out the volumes:
 - (a) credited to, debited from or taken from the Barmah-Millewa Allowance, and
 - (b) the volumes of Barmah-Millewa Overdraw released.
- (4) The maximum credit that may be held in the Barmah-Millewa Allowance at any time is 350,000 megalitres (hereafter *ML*).
- (5) Subject to subclause (4), the following volumes of water shall be credited to the Barmah-Millewa Allowance:
 - (a) 50,000 ML multiplied by the number of megalitres in an available water determination made for regulated river (high security) access licences in the Murray Water Source, minus the volume of the Barmah-Millewa Overdraw released in the preceding water year under subclause (7), whenever the available water determination made for regulated river (high security) access licences at the commencement of each water year is less than 0.97 megalitres per unit share,
 - (b) 50,000 ML, minus the volume of the Barmah-Millewa Overdraw released in the preceding water year under subclause (7), whenever the available water determination made for regulated river (high security) access licences at the commencement of each water year is equal to or greater than 0.97 megalitres per unit share,

- (c) a further volume of 25,000 ML in any water year when the seasonal allocations to Victorian water licence holders reaches 100% of 'water right' and 30% of 'sales', and

Note. Water right is the high security component of Victorian water licences, sales is a lower security component.

- (d) in accordance with subclauses (14) and (15), such volume as is necessary to return to the Barmah-Millewa Allowance any volume that has been taken from it under subclause (12).
- (6) Whenever Hume Dam spills, and the volume of water in the Barmah-Millewa Allowance at the time of spill exceeds 100,000 ML, the Barmah-Millewa Allowance shall be debited by a volume equal to the lesser of:
 - (a) the New South Wales share of the volume of water spilled, and
 - (b) the volume held in the account at the commencement of the spill minus 100,000 ML.
 - (7) Releases of Barmah-Millewa Allowance and Barmah-Millewa Overdraw from Hume Dam shall be made according to the rules in subclauses (8) to (11).
 - (8) If the flow in the Murray River at Yarrawonga has exceeded 500,000 ML in any four week period between 1 September and 31 October during the water year, and the volume in the Barmah-Millewa Allowance equals or exceeds 150,000 ML, then a release shall be made which is the lesser of:
 - (a) the volume in the Barmah-Millewa Allowance plus the Barmah-Millewa Overdraw, and
 - (b) the volume necessary to provide a flow in the Murray River at Yarrawonga of 500,000 ML each month until the end of November and 400,000 ML in December, if the flow in the Murray River at Yarrawonga has exceeded 660,000 ML in any four week period between 1 August and 30 November during the preceding 3 water years, and
 - (c) the volume necessary to provide a flow in the Murray River at Yarrawonga of 660,000 ML each month until the end of December, if the flow in the Murray River at Yarrawonga has not exceeded 660,000 ML in any four week period between 1 August and 30 November during the preceding 3 water years.
 - (9) If releases have not been triggered under subclause (8), and the flow in the Murray River at Yarrawonga has exceeded 500,000 ML in any four week period between 1 September and 30 November, then a release shall be made which is the lesser of:
 - (a) the volume in the Barmah-Millewa Allowance plus the Barmah-Millewa Overdraw, and
 - (b) the volume necessary to provide a flow in the Murray River at Yarrawonga of 400,000 ML in December.
 - (10) If 4 water years have passed in which, in no water year did the flow in the Murray River at Yarrawonga exceed 500,000 ML in any four week period between 1 September and 30 November and 400,000 ML in December, and in which there has been no release from the Barmah-Millewa Allowance, then releases shall be commenced in October of the current water year and shall be the lesser of:
 - (a) the volume in the Barmah-Millewa Allowance plus the Barmah-Millewa Overdraw, and

- (b) the volume necessary to provide a flow in the Murray River at Yarrawonga of 500,000 ML per month in October and November and 400,000 ML in December.
- (11) Releases of the Barmah-Millewa Overdraw shall only occur once the volume remaining in the Barmah-Millewa Allowance has reduced to zero.
- (12) Water is to be taken from the Barmah-Millewa Allowance and made available to Murray Water Source regulated river (general security) access licences whenever the total volume of water allocation provided by available water determinations made for Murray Water Source regulated river (general security) access licences during the current water year is less than a volume that is equal to 0.3 megalitres multiplied by the total number of unit shares specified in share components of all Murray Water Source regulated river (general security) access licences.
- (13) The volume of water taken from the Barmah-Millewa Allowance under subclause (12) shall be the lesser of:
 - (a) the volume necessary to permit further available water determinations to Murray Water Source regulated river (general security) access licence accounts such that the total referred to in subclause (12) is equal to 0.3 megalitres multiplied by the total number of unit shares specified in share component of all Murray Water Source regulated river (general security) access licences, and
 - (b) the volume in the Barmah-Millewa Allowance.
- (14) Once the total referred to in subclause (12) has reached a volume that is equal to 0.3 megalitres multiplied by the total number of unit shares specified in share components of all Murray Water Source regulated river (general security) access licences, no further available water determinations are to be made for Murray Water Source regulated river (general security) access licences during the water year until the Barmah-Millewa Allowance has been credited with a volume equivalent to that taken from it under subclause (12).
- (15) If sufficient water has not become available to allow credits to the Barmah-Millewa Allowance under subclause (14) that are equivalent to the volume taken from it under subclause (12), then the Barmah-Millewa Allowance is to be credited the difference between the volumes taken and the volumes credited prior to making an available water determination in any succeeding year that would bring the total volume of water allocation provided by available water determinations made for Murray Water Source regulated river (general security) access licences during the water year, to more than the equivalent of 0.3 megalitres multiplied by the total number of unit shares specified in share components of all Murray Water Source regulated river (general security) access licences.
- (16) The rules relating to the Barmah-Millewa Allowance and Barmah Millewa Overdraw in subclauses (8) to (15) may be varied under section 45 (1) (b) of the Act as set out in Part 14 of this Plan.
- (17) Subclauses (18) to (20) establish planned environmental water rules relating to the management of the Lower Darling Environmental Contingency Allowance (hereafter *the Lower Darling ECA*) in the Lower Darling Water Source.
- (18) The volume of water credited to the Lower Darling ECA at any time shall be:
 - (a) zero if the volume stored in Menindee Lakes is below 480,000 ML, or
 - (b) zero if the volume stored in Menindee Lakes has not risen above 640,000 ML since the volume stored last fell below 480,000 ML, or

- (c) 30,000 ML minus any release from the Lower Darling ECA during the current water that has resulted in a loss of total water volume available to New South Wales under the accounting rules applying to inter-state water sharing in the Murray and Lower Darling River.

Note. Water released from the New South Wales Lower Darling ECA may be subsequently re-regulated in the Murray below the Darling junction and again become available to New South Wales.

- (19) Releases from the Lower Darling ECA may occur whenever a high blue green algal alert level, as set out in the Sunraysia Regional Algal Contingency Strategy, is announced by the Minister in the Lower Darling Water Source.
- (20) The release rate shall be the lesser of:
 - (a) 2,000 megalitres per day (*hereafter ML/day*) in the months of May to October and 5,000 ML/day in the months November to April, and
 - (b) such lower rate as shall be determined by the Minister to be adequate to control blue green algal levels taking into account other river flows.
- (21) Subclauses (22) to (26) establish supplementary environmental water rules relating to the management of the New South Wales' Murray Regulated River Water Source Additional Environmental Allowance (*hereafter the Murray AEA*).
- (22) The maximum credit that may be held in the Murray AEA at any time shall be equal to 0.15 megalitres multiplied by the total number of unit shares specified in the share components of regulated river (high security) access licences.
- (23) Subject to clause (22), the Murray AEA shall be credited with a volume equivalent to 0.03 megalitres multiplied by the total number of unit shares specified in the share components of Murray Water Source regulated river (high security) access licences at the end of any water year when the sum of available water determinations to Murray Water Source regulated river (high security) access licences for the water year has not exceeded 0.97 megalitres per unit share.
- (24) Releases from the Murray AEA may be made for any purpose consistent with objectives (a) to (i) in clause 10 of this Plan.
- (25) The volume debited to the Murray AEA shall only be the volume of release in excess of that being made for all other purposes.
- (26) All volume credited to the Murray AEA shall be forfeited whenever Hume Dam water storage fills or water is pre-released from Hume Dam for flood management purposes.

16 Adaptive environmental water

- (1) At any time an access licence holder may, by a process determined by the Minister, commit all or part of their licence as adaptive environmental water.
- (2) The conditions of the commitment:
 - (a) are to be established by the Minister,
 - (b) are to be specified on the licence, and
 - (c) shall be such as to ensure that there will be a contribution to the objectives of this Plan.
- (3) The following licences shall be granted to and held by the Ministerial Corporation, committed as adaptive environmental water and made subject to the relevant mandatory condition set out in Part 11 of this Plan:

- (a) a regulated river (conveyance) access licence with a share component of 30,000 unit shares, and.
- (b) a regulated river (high security) access licence with a share component of 2,027 unit shares.

Note. The licence referred to in subclause (3) (a) is a consequence of the Murray Irrigation Limited privatisation arrangements and the licence in (3) (b) is the result of water savings resulting from works installed to regulate inflows to Moira Lake.

- (4) The management of water allocations accruing to the access licences in subclause (3) should be in accordance with a protocol established by the Minister in consultation with the Minister for the Environment.

Part 4 Basic landholder rights

17 Basic landholder rights

This Part is made in accordance with section 20 (1) (b) of the Act.

18 Domestic and stock rights

Note. Water from these water sources should not be consumed without prior treatment which is adequate to ensure its safety.

- (1) At the commencement of this Plan the water requirements of holders of domestic and stock rights in the Murray Water Source is estimated to be 2,118 megalitres per year (hereafter *ML/yr*).
- (2) At the commencement of this Plan the water requirements of holders of domestic and stock rights in the Lower Darling Water Source is estimated to be 3,727 ML/yr.
- (3) 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 in these water sources may occur as a result of an increase in the number of landholdings fronting these water sources or by an increase in the exercise of domestic and stock rights on landholdings.

- (4) The water supply system in the Murray water source shall be managed so that it would be capable of maintaining supply to those exercising domestic and stock rights through a repeat of the worst period of low inflows to each water source for which flow information is held by the Department.
- (5) To achieve subclause (4), sufficient volumes of water must be set aside from the New South Wales share of assured inflows into each water source and in reserves held by New South Wales in water storages in each water source.

Note. The Minister may issue an order under section 328 of the Act to restrict the exercise of domestic and stock basic rights from the water source to protect the environment, for reasons of public health, or to preserve basic landholder rights.

19 Native title rights

Note. Water from these water sources should not be consumed without prior treatment which is adequate to ensure its safety.

- (1) At the commencement of this Plan there are no holders of native title rights in the Murray Water Source water source and therefore native title rights are 0 ML/yr.
- (2) At the commencement of this Plan there are no holders of native title rights in the Lower Darling Water Source and therefore native title rights are 0 ML/yr.
- (3) This Plan recognises that the exercise of native title rights may increase during the term of this Plan.

Note. 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*.

- (4) The water supply system in the Murray water source shall be managed so that it would be capable of maintaining supply to those exercising native title rights through a repeat of the worst period of low inflows to each water source for which flow information is held by the Department.
- (5) To achieve subclause (4), sufficient volumes of water must be set aside from the New South Wales share of assured inflows into each water source and in reserves held by New South Wales in water storages in each water source.

Part 5 Bulk access regime

20 Bulk access regime

- (1) This Part is made in accordance with section 20 (1) (e) of the Act.
- (2) This Plan establishes bulk access regimes for the extraction of water under access licences in each of these water sources having regard to:
 - (a) the environmental water provisions established under Part 3 of this Plan,
 - (b) the requirements for basic landholder rights identified under Part 4 of this Plan, and
 - (c) the requirements for water for extraction under access licences identified under Part 6 of this Plan.
- (3) The bulk access regime established under subclause (2):
 - (a) establishes rules according to which access licences are granted as provided for in Part 7 of this Plan,
 - (b) recognises and is consistent with the limits to the availability of water as provided for in Part 8 of this Plan,
 - (c) establishes rules according to which available water determinations are to be made as provided for in Part 8 of this Plan,
 - (d) recognises the effect of climatic variability on the availability of water as provided for in Part 8 of this Plan,
 - (e) establishes rules with respect to the priorities according to which access licences are to be adjusted as a consequence of any reduction of the availability of water as provided for in Part 8 of this Plan, and
 - (f) establishes rules according to which access licences are managed as provide for in Part 9 of this Plan.

Part 6 Requirements for water under access licences

21 Requirements for water under access licences

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

Note. The following clauses in this Part represent the total volumes specified in the share components of access licences in these water sources. There is no commitment to make these volumes available. The actual volumes available at any time will depend on climate, licence priority and the rules in this Plan.

22 Share component of domestic and stock access licences

- (1) It is estimated that, at the time of commencement of Part 2 of Chapter 3 of the Act, the share components of domestic and stock licences authorised to extract water from the Murray Regulated River Water Source will total 14,518 ML/yr.
- (2) It is estimated that, at the time of commencement of Part 2 of Chapter 3 of the Act, the share components of domestic and stock licences authorised to extract water from the Lower Darling Regulated River Water Source will total 601 ML/yr.

23 Share component of local water utility access licences

- (1) It is estimated that, at the time of commencement of Part 2 of Chapter 3 of the Act, the share components of local water utility access licences authorised to extract water from the Murray Regulated River Water Source will total 33,336 ML/yr.

Note. Subclause (1) does not include local water utility access licence entitlements for the towns of Berrigan, Finley, Wakool and Bunaloo which total 3,828 ML. These licensed requirements are met from water supplies delivered to Murray Irrigation Limited.

- (2) It is estimated that at the time of commencement of Part 2 of Chapter 3 of the Act, the share components of local water utility access licences authorised to extract water from the Lower Darling Regulated River Water Source will total 10,160 ML/yr.

24 Share component of regulated river (high security) access licences

- (1) It is estimated that, at the time of commencement of Part 2 of Chapter 3 of the Act, the share components of regulated river (high security) access licences authorised to extract water from the Murray Regulated River Water Source will total 198,011 unit shares.
- (2) It is estimated that, at the time of commencement of Part 2 of Chapter 3 of the Act, the share components of regulated river (high security) access licences authorised to extract water from the Lower Darling Regulated River Water Source will total 7,999 unit shares.

25 Share component of regulated river (conveyance) access licences

It is estimated that, at the time of commencement of Part 2 of Chapter 3 of the Act, the share components of regulated river (conveyance) access licences authorised to extract water from the Murray Regulated River Water Source will total 330,000 unit shares.

Note. The 330,000 unit shares are a consequence of the Murray Irrigation Limited losses provisions. Murray Irrigation Limited will receive 300,000 unit shares and 30,000 unit shares will become share component of the adaptive environmental regulated river (conveyance) access licence referred to in subclause 16 (3).

26 Share component of regulated river (general security) access licences

- (1) It is estimated that, at the time of commencement of Part 2 of Chapter 3 of the Act, the share components of regulated river (general security) access licences authorised to extract water from the Murray Regulated River Water Source will total 1,670,508 unit shares.
- (2) It is estimated that at the time of commencement of Part 2 of Chapter 3 of the Act, the share components of regulated river (general security) access licences authorised to extract water from the Lower Darling Regulated River Water Source will total 30,288 unit shares.

27 Share component of supplementary water access licences

- (1) It is estimated that at the time of commencement of Part 2 of Chapter 3 of the Act, the volume of supplementary water access licences authorised to access water from the Murray Regulated River Water Source will total 250,000 unit shares.
- (2) It is estimated that, at the time of commencement of Part 2 of Chapter 3 of the Act, the volume of supplementary water access licences authorised to access water from the Lower Darling Regulated River Water Source will total 250,000 unit shares.

28 Changes to total share component

This Plan recognises that total requirements for extraction under access licences in each access licence category may change during the term of this Plan as a result of:

- (a) the granting, surrender, cancellation or non renewal of access licences, or
- (b) variations to local water utility access licences arising from section 66 of the Act.

Part 7 Rules for granting access licences

29 Rules for granting access licences

- (1) This Part is made in accordance with sections 20 (2) (b) and 63 of the Act.
- (2) Access licences may be granted in these water sources subject to any embargo on the making of applications for access licences made under Chapter 3 Part 2 Division 7 of the Act.
- (3) The Minister should declare an embargo on the making of applications for access licences in these water sources, other than for access licences of the following kinds:
 - (a) local water utility access licences,
Note. Pursuant to sections 66 (3) and 66 (4) of the Act, the Minister may also vary a local water utility's entitlement to water at five yearly intervals, or on application of the local water utility where there is a rapid growth in population.
 - (b) domestic and stock (domestic only) access licences,
 - (c) access licences issued as part of alternative arrangements which replace the replenishment flow provisions relating to the Great Anabranch, in clause 60 of this Plan,
 - (d) an access licence required to satisfy subclause 16 (3) of this Plan,
 - (e) specific purpose access licences for which applications are provided for under the regulations in accordance with section 61 (1) (a) of the Act,
 - (f) regulated river (high security) (Aboriginal cultural) access licences up to 10 ML/yr per application,
 - (g) a regulated river (high security – research) access licence for water supply for research purposes, provided that such research is undertaken by an organisation approved by the Minister as an accredited research body, and
 - (h) an access licence which will receive water allocations that reflect the volume of water saved as a result of works or other actions taken under the Snowy Water Inquiry Outcomes Implementation.
- (4) In applying for a new access licence, the applicant must establish the purpose and circumstances relating to that access licence, and that the share component sought will be the minimum required to meet that purpose and circumstances.
- (5) Subclause (4) does not apply to an application for a new access licence arising from:
 - (a) section 61 (1) (c) of the Act, where the right has been acquired by auction, tender or other open market process,
 - (b) an access licence dealing, or,
 - (c) subclauses (3) (c) or (3) (d).

Part 8 Limits to the availability of water

Division 1 Long-term extraction limit

30 Long-term extraction limit

This Division is made in accordance with sections 20 (2) (a) of the Act.

31 Volume of the long-term extraction limit

- (1) This Plan establishes a long-term extraction limit for each of these water sources which is the lesser of:
 - (a) the long-term average annual extraction from the water source that would occur with the water storages, share components and water use development that existed in the water source in 2000/2001, and the water management rules defined in this Plan, and
 - (b) the long-term average annual extraction from the water source that would occur under the development and management conditions used to define Cap in Schedule F of the Murray Darling Basin Agreement.
- (2) The values referred to in subclauses (1) (a) and (1) (b) shall be adjusted for any access licence dealing under section 71R or 71U of the Act.
- (3) If an access licence is cancelled as part of an arrangement to provide additional water to the Snowy River under the Snowy Water Inquiry Outcomes Implementation Deed the values referred to in subclauses (1) (a) and (1) (b) shall be reduced by a volume which appropriately reflects the licence share of water made available in this water source.
- (4) For the purposes of establishing the long-term extraction limit for each of these water sources and auditing compliance with it, the following shall be included:
 - (a) all water extractions by all categories of access licences in accordance with the rules used for accounting of Cap diversions for Schedule F of the Murray Darling Basin Agreement,
 - (b) domestic and stock rights and native title rights extractions,
 - (c) volumes of water delivered as adaptive environmental water,
 - (d) floodplain harvesting diversions determined to be taken for use in conjunction with extractions authorised from the water source, and
 - (e) water allocations assigned from access licence water allocation accounts in the water source to access licence water allocation accounts in another water source.
- (5) For the purposes of establishing the long-term extraction limit for each of these water sources and auditing compliance with it, the following shall not be included:
 - (a) replenishment flows made in accordance with this Plan, or
 - (b) diversion of water pursuant to the environmental health water rules and the supplementary environmental water rules in Part 3 of this Plan.
- (6) For the purpose of establishing the long-term extraction limit for each of these water sources and auditing compliance with it, the assessed volume of extractions shall be reduced by the volume of water allocations being assigned from the water allocation accounts of access licences in any other water source to the water allocation accounts of access licences in the water source.

32 Assessment of the long-term extraction limit and current long-term average annual extraction

- (1) Assessment of the long-term extraction limit and the current long-term average annual extraction for each water source shall be carried out, after the end of each water year, using the hydrologic computer model that, at the time, is approved by the Department for assessing long-term water extraction from the water source.
- (2) To assess the long-term extraction limit in each water source, the model referred to in subclause (1) shall be set to represent as closely as possible the conditions referred to in clauses 31 (1) (a) and 31 (1) (b)
- (3) To assess the current long-term average annual extraction from each water source, the model referred to in subclause (1) shall be set to represent as closely as possible all water use development, supply system management and other factors affecting the long-term average annual extraction from the water sources at the time of assessment.

33 Compliance with the long-term extraction limit

- (1) The long-term average annual extraction from each of these water sources may not exceed the long-term extraction limit for the water source, specified in clause 31.
- (2) Pursuant to subclause (1):
 - (a) if it has been assessed that the current long-term average annual extraction from either of these water sources, exceeds:
 - (i) the volume specified in clause 31 (1) (a) by 3% or more, or
 - (ii) the volume specified in clause 31 (1) (a) by more than half the difference between the volume specified in clause 31 (1) (a) and the volume specified in clause 31 (1) (b), or
 - (iii) the volume specified in clause 30 (1) (b), or
 - (b) if the assessments for 3 consecutive water years indicate that the current long-term average annual extraction from the water source exceeds its long-term extraction limit, then
 - (c) the maximum available water determination made for supplementary water access licences in the relevant water source, under clause 40, shall be reduced, and
 - (d) once the maximum available water determination for supplementary water access licences in the water source has reduced to zero, the maximum available water determination for a regulated river (general security) access licences in the relevant water source, under clause 39, shall be reduced.
- (3) The degree of reduction required under subclause (2) shall be that assessed necessary to return the long-term average annual extraction from the water source to the long-term extraction limit for the water source.
- (4) If action has been taken under subclause (2) in either of these water sources, and a subsequent assessment under clause 32 indicates that the current long-term average annual extraction from the water source is below the long-term extraction limit for the water source by more than 3%, then previous reductions in the water source made under subclause (2) may be reversed to the degree that it is assessed necessary to return long-term average annual water extractions to the long-term extraction limit for the water source.
- (5) Any reversal of previous reductions under subclause (4) shall:

- (a) not exceed previous reductions made under subclause (2), and
 - (b) shall first reverse previous reductions made under subclause (2) relating to regulated river (general security) access licence available water determinations.
- (6) The assessment of the degree of reduction required under subclause (2) or degree of reversal under subclause (5) shall be made using the same computer model used to carry out assessments under clause 32.

Division 2 Available water determinations

34 Available water determinations

- (1) This Division is made in accordance with section 20 (2) (b) of the Act.
- (2) All available water determinations in these water 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 share for all regulated river (high security) access licences, regulated river (general security) access licences and supplementary water access licences.

35 Available water determinations for domestic and stock access licences

- (1) The water supply system in the Murray Water Source shall be managed so that available water determinations for domestic and stock access licences of 100% of share components can be maintained through a repeat of the worst period of low inflows to the Murray Water Source represented in flow information held by the Department.
- (2) Sufficient volumes of water must be set aside from the New South Wales share of assured inflows into the Murray Water Source and in reserves held by New South Wales in water storages to provide for subclause (1).
- (3) The available water determination for domestic and stock access licences made for the commencement of each water year in each water source shall be 100% of share components, whenever possible.
- (4) The sum of available water determinations made for domestic and stock access licences in each water source in any year shall not exceed 100% of share components.
- (5) This Plan recognises that the water requirement of domestic and stock access licences in each water source may increase during the term of this Plan as a result of clause 29.
- (6) The volumes of water set aside from the New South Wales share of assured inflows into the Murray Water Source and in reserves held by New South Wales in water storages shall be adjusted as required over the course of this Plan, if necessary to do so to ensure subclause (1) is satisfied.

36 Available water determinations for local water utility access licences

- (1) The water supply system in the Murray Water Source shall be managed so that available water determinations for local water utility access licences of 100% of share components can be maintained through a repeat of the worst period of low

inflows to the Murray Water Source represented in flow information held by the Department.

- (2) Sufficient volumes of water must be set aside from the New South Wales share of assured inflows into the Murray Water Source and in reserves held by New South Wales in water storages to provide for subclause (1).
- (3) The available water determination for local water utility access licences made for the commencement of each water year in each water source shall be 100% of share components, whenever possible.
- (4) The sum of available water determinations made for local water utility access licences in each water source in any year shall not exceed 100% of share components.
- (5) This Plan recognises that the water requirement of local water utility access licences in each water source may increase during the term of this Plan in accordance with clause 29 and section 66 of the Act.
- (6) The volumes of water set aside from the New South Wales share of assured inflows into the Murray Water Source and in reserves held by New South Wales in water storages shall be adjusted as required over the course of this Plan if necessary to ensure subclause (1) is satisfied.

37 Available water determinations for regulated river (high security) access licences

- (1) The water supply system of the Murray Water Source shall be managed so that available water determinations for regulated river (high security) access licences of 0.97 megalitres per unit share can be maintained through a repeat of the worst period of low inflows to the Murray Water Source represented in flow information held by the Department.
- (2) Sufficient volumes of water must be set aside from the New South Wales share of assured inflows into the Murray Regulated River water source and in reserves held by New South Wales in water storages to provide for subclause (1).
- (3) The sum of available water determinations for regulated river (high security) access licences in the Murray Water Source for each water year shall be:
 - (a) 0.97 megalitres per unit share, whenever the sum of available water determinations for regulated river (general security) access licences in the Murray Water Source for the water year is less than 0.97 megalitres per unit share, or
 - (b) 1 megalitre per unit share, whenever the available water determinations for regulated river (general security) access licences in the Murray Water Source for the water year is 0.97 megalitres per unit share or greater.
- (4) The available water determinations for regulated river (high security) access licences in the Lower Darling Water Source made for the commencement of each water year shall be 1 megalitre per unit share, whenever possible.
- (5) If the available water determination made under subclause (4) is less than 1 megalitre per unit share then further assessments of available water shall be carried out at least monthly and available water determinations made until the sum of available water determinations for the water year is 1 megalitre per unit share.
- (6) The sum of available water determinations made for regulated river (high security) licences in each water source in any water year shall not exceed 1 megalitre per unit share.

- (7) Available water determinations for regulated river (high security) access licences in each water source must take into account:
- (a) the environmental water provisions for the water source established by this Plan,
 - (b) requirements for domestic and stock rights in the water source,
 - (c) requirements for native title rights in the water source,
 - (d) requirements for domestic and stock access licences in the water source,
 - (e) requirements for local water utility access licences in the water source,
 - (f) volumes remaining in water accounts from previous available water determinations in the water source,
 - (g) where applicable, water losses associated with holding and delivery of water to meet the requirements specified in subclauses (a) to (f),
 - (h) where applicable, an appropriate volume to meet water losses associated with the holding and delivery of water resulting from an available water determination, and
 - (i) any other relevant matters.

38 Available water determinations for regulated river (conveyance) access licences

- (1) An available water determination is not to be made for regulated river (conveyance) access licences in the Murray Water Source in any water year until the sum of available water determinations for regulated river (high security) licences in the water source, for the water year, is at least 0.97 megalitres per unit share.
- (2) Available water determinations for regulated river (conveyance) access licences in the Murray Water Source shall be made for the commencement of each water year in which water can be provided to them.
- (3) Available water determinations for regulated river (conveyance) access licences and regulated river (general security) access licences in the Murray Water Source shall be made so that the sum of available water determinations for regulated river (conveyance) access during the water year is:
- (a) 0.5 megalitres per unit share, when the sum of available water determinations for regulated river (high security) licences for the water year is 0.97 megalitres per unit share and the sum of available water determinations for regulated river (general security) access licences for the water year is 0 megalitres per unit share, or
 - (b) 0.5 megalitres per unit share plus 0.003883 megalitres per unit share for each 0.01 megalitre per unit share by which the sum of available water determinations for regulated river (general security) licences for the water year exceeds 0 megalitres per unit share, when the sum of available water determinations for regulated river (general security) licences for the water year is equal to or greater than 0 megalitres per unit share but less than 0.60 megalitres per unit share, or
 - (c) 0.733 megalitres per unit share plus 0.006675 megalitres per unit share for each 0.01 megalitres per unit share by which the sum of available water determinations for regulated river (general security) licences for the water year exceeds 0.6 megalitres per unit share when the sum of available water determinations for regulated river (general security) licences for the water

- year is equal to or greater than 0.6 megalitres per unit share but less than 1 megalitre per unit share, or
- (d) 1 megalitre per unit share when the sum of available water determinations for regulated river (general security) licences for the water year is equivalent to or greater than 1 megalitre per unit share.
- (4) Subclauses (3) (a) and (3) (b) may be varied under section 45 (1) (b) of the Act as set out in Part 14.
- (5) Available water determinations made for regulated river (conveyance) access licences must take into account:
- (a) the environmental water provisions for the water source established by this Plan,
 - (b) requirements for domestic and stock rights in the water source,
 - (c) requirements for native title rights in the water source,
 - (d) requirements for domestic and stock access licences in the water source,
 - (e) requirements for local water utility access licences in the water source,
 - (f) requirements of regulated river (high security) access licences in the water source,
 - (g) volumes remaining in water accounts from previous available water determinations in the water source,
 - (h) where applicable, water losses associated with holding and delivery of water to meet the requirements specified in subclauses (a) to (g),
 - (i) where applicable, an appropriate volume to meet water losses associated with the holding and delivery of water resulting from an available water determination, and
 - (j) any other relevant matters.

39 Available water determinations for regulated river (general security) access licences

- (1) An available water determination is not to be made for regulated river (general security) access licences in the Murray Water Source in any water year until the sum of available water determinations for regulated river (high security) licences in the water source, for the water year, is at least 0.97 megalitres per unit share.
- (2) An available water determination is not to be made for regulated river (general security) access licences in the Lower Darling Water Source in any water year until the sum of available water determinations for regulated river (high security) licences in the water source, for the water year, is 1 megalitre per unit share.
- (3) An available water determinations for regulated river (general security) access licences in each water source shall be made for the commencement of each water if water can be provided to them.
- (4) If the available water determination for regulated river (general security) access licences in the Murray Water Source resulting from subclause (2) is less than the percentage specified in subclause (6), then further assessments of available water shall be carried out at least monthly and available water determinations made if water allocation can be provided.
- (5) If the allocation to regulated river (general security) access licences in the Lower Darling Regulated River Water Source resulting from subclause (2) is less than the

water allocation percentage specified in subclause (7), then further assessments of available water shall be carried out at least monthly and available water determinations made if water allocation can be provided.

- (6) The sum of available water determinations made for regulated river (general security) access licences in the Murray Water Source in any water year shall not exceed 1.1 megalitre per unit share or such lower amount as results from the operation of clause 33.
- (7) The sum of allocations to regulated river (general security) access licences in the Lower Darling Regulated River Water Source in any water year shall not exceed 1 megalitre per unit share or such lower amount as results from the operation of clause 33.
- (8) Before water available to New South Wales from water storages in the Lower Darling Water Source may be considered in assessments of available water in the Murray Water Source, the sum of allocations made for regulated river (general security) access licences in the Lower Darling Regulated River Water Source in that water year must be that specified in subclause (7).
- (9) Available water determinations made under this clause in each water source must take into account any relevant operational requirements identified in this Plan and:
 - (a) the environmental water provisions for the water source established by this Plan,
 - (b) requirements for domestic and stock rights in the water source,
 - (c) requirements for native title rights in the water source,
 - (d) requirements for domestic and stock access licences in the water source,
 - (e) requirements for local water utility access licences in the water source,
 - (f) requirements for regulated river (high security) access licences in the water source,
 - (g) requirements of regulated river (conveyance) access licences in the water source,
 - (h) allocations remaining in water accounts of access licences in the water source from previous available water determinations;
 - (i) where applicable, water losses associated with holding and delivery of water to meet the requirements specified in subclauses (a) to (h),
 - (j) where applicable, an appropriate volume to meet water losses associated with the holding and delivery of water resulting from an available water determination, and
 - (k) any other relevant matters.
- (10) Whenever the sum of available water determinations for regulated river (general security) access licences in either of these water sources in a water year is less than or equal to 0.6 megalitres per unit share, available water determinations for regulated river (general security) access licences in that water source shall also indicate that:
 - (a) water may be taken without debit to regulated river (general security) access licence water allocation accounts whenever the taking of water under supplementary water access licences is permitted, and
 - (b) the total volume of water that shall be assessed as taken without debit to the access licence water allocation account under subclause (10) (a) during the

water year is limited to 1 megalitre multiplied by the number of unit shares minus the sum of the volume of water allocation that was carried over in the access licence water allocation account from the previous water year and the volume of water allocations resulting from available water determinations during the current year.

40 Available water determinations for supplementary water access licences

- (1) For each water source, an available water determination shall be made for supplementary water access licences at the commencement of each water year and shall define the number of megalitres per unit share that can be taken in that year.
- (2) The available water determination for Murray Water Source supplementary water access licences made under subclause (1) shall not exceed 1 megalitre per unit share, or such lower amount as results from the operation of clause 33.
- (3) The available water determination for Lower-Darling Water Source supplementary water access licences made under subclause (1) shall not exceed 1 megalitre per unit share, or such lower amount as results from the operation of clause 33.

Part 9 Rules for managing access licences

Division 1 General

41 Rules for managing access licences

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

- (a) the environmental water rules established in Part 3 of this Plan,
- (b) requirements for water to satisfy basic landholder rights identified in Part 4 of this Plan, and
- (c) requirements for water for extraction under access licences in Part 6 of this Plan.

Division 2 Water allocation account management

42 Water allocation accounts

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

43 Accrual of water allocations

- (1) Water allocations shall be accrued into each access licence water allocation account in accordance with the available water determinations made for the category of access licence in the water source.
- (2) The maximum volume of water allocation that may be credited to a regulated river (general security) licence in the NSW Murray Regulated River Water Source from available water determinations during a water year shall be equal to 1.1 megalitres multiplied by the number of unit shares specified in the access licence share component minus the volume of water allocations carried over from the previous water year.

Note. Subclause (2) means that if a volume equivalent to say 0.3 megalitres per unit share is carried over in a licence account and the allocations for the water year totalled say 0.9 megalitres per unit share, then the licence account would only be credited with a further 0.8 megalitres per unit share. The balance of 0.1 megalitres per unit share would not be credited to that licence account.

- (3) The maximum volume of water allocation that may be credited to a regulated river (general security) licence in the Lower Darling Regulated River Water Source from available water determinations during a water year shall be the greater of:
 - (a) 0.5 megalitres multiplied by the number of unit shares, or
 - (b) 1 megalitre multiplied by the number of unit shares minus the volume of water allocations carried over from the previous water year.

Note. Subclause (3) ensures that those regulated river (general security) access licence holders with on-farm storages who have carried over additional water as a result of the operation of clause 46 (3) can receive up to 50% of the current year's water allocations.

44 Volume taken under access licences

- (1) The water allocation taken under local water utility access licences, domestic and stock access licences, regulated river (high security) access licences, regulated river (conveyance) access licences and supplementary water access licences shall be assessed as:

- (a) the volume of water extracted by the approved water supply works nominated by the access licence, or
- (b) the greater of:
 - (i) the volume of water extracted by the approved water supply works nominated by the access licence, or
 - (ii) the volume of water ordered for extraction by the approved water supply works nominated by the access licence,

where the Minister has applied such a discretionary condition to the access licence.

- (2) The water allocation taken under regulated river (general security) access licences shall be assessed as:

- (a) the volume of water extracted by the approved water supply works nominated by the access licence, subject to the provisions of subclause 39 (9) and resulting available water determinations, or
- (b) the greater of:
 - (i) the volume of water extracted by the approved water supply works nominated by the access licence, subject to the provisions of subclause 39 (10) and resulting available water determinations, or
 - (ii) the volume of water ordered for extraction by the approved water supply works nominated by the access licence,

where the Minister has applied such a discretionary condition to the access licence.

- (3) The Minister should only apply a discretionary condition in relation to subclauses (1) (b) or (2) (b) where this has been provided for in a compliance management strategy, approved by the Minister.

Note. It is intended that the discretionary condition referred to above should only be applied where water orders have been exceeding the volume of water being taken under an access licence and this cannot be explained by rainfall or other unavoidable factors.

- (4) Water allocation losses attributed to evaporation and dam spills associated with water allocations carried over from the previous water year in the water allocation accounts of each Lower Darling Water Source regulated river (general security) access licences are to be calculated as set out in subclauses (5) and (6) and withdrawn from each access licence water allocation account.

- (5) The water allocation loss attributed to evaporation shall be the lesser of:

- (a) the volume of water allocation in the access licence account at the commencement of the assessment period in excess of:
 - (i) the licence share component volume multiplied by the total of the available water determination percentage for that water year,
 - (ii) plus the water allocations assigned from any other access licence during the current water year,
 - (iii) minus the water allocations assigned to any other access licence during the current water year, and
- (b) the volume calculated under subclause 5 (a), divided by the total of the volumes calculated under subclause 5 (a) for all regulated river (general security) access licences in the water source, multiplied by the depth of evaporation from the Menindee Lakes over the period of assessment multiplied by the additional surface area of water in the Menindee Lakes

resulting from total excess volume calculated under subclause 5 (a) for all regulated river (general security) access licences in the water source.

- (6) The water allocation loss attributed to dam spills shall be the lesser of :
- (a) the volume calculated under subclause 5 (a), and
 - (b) the volume calculated under subclause 5 (a), divided by the total of the volumes calculated under subclause 5 (a) for all regulated river (general security) access licences in the water source, multiplied by the total volume of water spilled from Menindee Lakes during the assessment period.

45 Accounting of assigned allocations and return flows

- (1) Water allocations assigned from a water allocation account under Chapter 3 Part 2 Division 4 of the Act shall be debited from that water allocation account and water allocations assigned to a water allocation account under Chapter 3 Part 2 Division 4 of the Act shall be credited to that water allocation account.
- (2) Water allocations may also be re-credited to access licence water allocation accounts under section 76 of the Act, in accordance with water return flow rules established under section 75 of the Act.

46 Carrying over of water allocation credits

- (1) Water allocation remaining in the water allocation accounts of domestic and stock access licences, local water utility access licences, regulated river (high security) access licences, regulated river (conveyance) access licences and supplementary water access licences cannot be carried over from one water year to the next.
- (2) The maximum volume of water allocation that may be carried over in the water allocation accounts of a regulated river (general security) access licences in the Murray Water Source from one water year to the next shall be equal to 0.5 megalitres multiplied by the number of unit shares specified in the access licence share component
- (3) The maximum volume of water allocation that may be carried over in the water allocation accounts of a regulated river (general security) access licences in the Lower Darling Water Source from one water year to the next shall be equal to 0.5 megalitres multiplied by the number of unit shares specified in the access licence share component plus the storage volume of on-farm storages supplied by works nominated on the access licence less the volume of water contained in the on-farm storages at the end of the water year.

Division 3 Extraction conditions

47 General priority of extractions

Where extraction components of access licences do not specify the rate as a share of supply capability or a volume per unit time, the following priority of extractions shall apply whenever supply capability is insufficient to satisfy all orders for water in any section of these water sources:

- (a) water shall be supplied to domestic and stock access licences and local water utility access licences that have placed an order for water for that time, and
- (b) then any remaining supply capability shall be shared between regulated river (high security) access licences, regulated river (conveyance) access licences and regulated river (general security) access licences that have placed an order for water in proportion to the share component volume of each access licence multiplied by the total percentage of the available water

determinations made for the relevant licence category during the current water year.

48 Numerical specification of extraction entitlements

- (1) At any time during the term of this Plan, the Minister may, in accordance with the mandatory conditions on access licences, amend the extraction components of access licences in either of these water sources, or in any section of either of either of these water sources.
- (2) Action under subclause (1) should be undertaken as follows:
 - (a) the specified rate in the extraction component of each access licence should be a volume per unit of time or a share of supply capability,
 - (b) the specified rate in the extraction component of each domestic and stock local water utility, regulated river (high security) access licence should be sufficient to satisfy the maximum daily water needs, and
 - (c) after satisfying subclause (2) (b), the remaining supply capability should be distributed among regulated river (conveyance) access licences and regulated river (general security) access licences in proportion to the share component of each access licence and the available water determination relationship in clause (38) (3).
- (3) When action under subclause (1) is undertaken, the Minister may also, in accordance with mandatory conditions on access licences, amend the extraction components of access licences in other sections of the water source to exclude extractions in sections of the water source affected by the action under subclause (1).

49 Extraction under supplementary water access licences

- (1) The taking of water under supplementary water access licences in these water sources shall only be permitted in accordance with announcements made by the Minister for each water source.
- (2) The maximum volume that may be taken under supplementary water access licences during each period of time to which an announcement applies may be expressed as a number of megalitres per unit share specified in the share component of each supplementary water access licence.
- (3) Taking of water under supplementary water access licences in each of these water sources shall be managed, as far as possible, to evenly share access opportunity amongst all supplementary water access licences.
- (4) Taking of water under supplementary water access licences in these water sources shall only be permitted once flows are in excess of those required :
 - (a) under the environmental water provisions for the water source specified in Part 3 of this Plan,
 - (b) to supply stock and domestic and native title rights requirements in the water source,
 - (c) to supply higher priority access licence requirements in the water source, and
 - (d) to provide replenishment flows requirements in the Lower Darling Water Source.
- (5) Taking of water under supplementary water access licences in the Murray Water Source shall only be permitted:

- (a) from flows that cannot be stored in Lake Victoria water storage,
 - (b) from flows that, in the opinion of the Minister, will not contribute to supply requirements to South Australia in accordance with the Murray Darling Basin Agreement,
 - (c) from flows that, in the opinion of the Minister, will not contribute to reducing the surface water salinity measurement in the Murray River at Morgan when it is in excess of 800 Electrical Conductivity units
 - (d) if, in the opinion of the Minister, the water that will be taken would not assist in the reduction of existing medium or high blue-green algae alerts,
 - (e) if, in the opinion of the Minister, the taking of water will not prevent the commencement of a waterbird breeding event or will not threaten the success of an existing waterbird breeding event, and
 - (f) between 1 April and 30 October each year, if, in the opinion of the Minister, the taking of water will not prevent significant flow variations in those sections of the water source where flow heights are unaffected by weirs, or reduce beneficial flooding of the Barmah-Millewa forests or other Murray River Water Source riverine ecosystems.
- (6) Taking of water under supplementary water access licences in the Lower Darling Water Source shall also only be permitted:
- (a) if the Menindee Lakes water storages are full or flows upstream of the Water Source are sufficient to fill them,
 - (b) if the water that will be taken cannot be stored in Lake Victoria,
 - (c) from flows that in the opinion of the Minister, will not contribute to supply requirements to South Australia in accordance with the Murray Darling Basin Agreement,
 - (d) if, in the opinion of the Minister, the water that will be taken cannot be used to supply regulated river (general security) allocations in the Murray Valley,
 - (e) from flows that in the opinion of the Minister, will not contribute to reducing the surface water salinity measurement in the Murray River at Morgan when it is in excess of 800 Electrical Conductivity units,
 - (f) if in the opinion of the Minister, the water that will be taken will not contribute to the reduction of existing medium or high blue-green algae alerts,
 - (g) if the taking of water will not prevent flows in the Darling River from reaching 7,000 ML/day at Weir 32 for a period of time which, in the opinion of the Minister, is sufficient to permit adequate passage of fish over Weir 32,
 - (h) if, in the opinion of the Minister, the taking of water will not prevent the commencement of a waterbird breeding event or will not threaten the success of an existing event, and
 - (i) between 1 April and 30 October each year, if, in the opinion of the Minister, the taking of water will not prevent significant flow variations occurring in those sections of the water source where flow heights are unaffected by weirs.

Part 10 Dealings with access licences

50 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 on 27 December 2002 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. Access licence dealings include changes of licence ownership, conversions of licence category, movement of share component from one access licence to another access licence, movement of water allocation from one access licence allocation account to another access licence allocation account and changes in the location of water supply that can take water available under the licence. These dealings must comply with the provisions of the Act, the 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 access licence dealing rules in this Plan to prevail.

51 Rules relating to constraints within this water source

- (1) This clause relates to dealings under sections 71O, 71Q, 71T, and 71W of the Act.
- (2) Any dealing that would result in the assignment of all or part of the share component of an access licence, whose extraction component only permits the taking of water upstream of the Barmah Choke, to an access licence, whose extraction component permits the taking of water downstream of the Barmah Choke shall be prohibited.
- (3) Any dealing that would result in the assignment of water allocation from the water allocation account of an access licence, whose extraction component only permits the taking of water upstream of the Barmah Choke, to an access licence, whose extraction component permits the taking of water downstream of the Barmah Choke may only occur if the Minister is satisfied that the assignment will not diminish the ability to fully supply all water orders that may result from water allocations already in the water allocation accounts of access licences whose extraction components permit extraction of water downstream of the Barmah Choke.
- (4) Assignment of water allocations from a supplementary water access licence water allocation account to an access licence of any other access licence category shall be prohibited.
- (5) Assignment of water allocations to a supplementary water access licence water allocation account from an access licence of any other access licence category shall be prohibited.
- (6) Assignment of water allocations from a local water utility access licence account to the water allocation account of any other access licence is prohibited whenever
 - (a) the volume of water stored in Menindee Lakes is below 480,000 ML, or
 - (b) the volume stored in Menindee Lakes has not risen above 640,000 ML since the volume stored last fell below 480,000 ML.

52 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) Access licences in other water sources outside of one of these water sources may only be issued following cancellation of access licences in one of these water sources if:
- (a) the access licence dealing rules in the receiving water source permit such a dealing,
 - (b) a conversion factor, established by the Minister and published in an order made under section 71Z of the Act that protects environmental water, domestic and stock rights, native title rights and the reliability of supply to all other access licences in the water source in which the access licence is being cancelled, has been applied, and
 - (c) the water source in which the access licence is issued is one of the following:
 - (i) a water source within the Murray Unregulated River Extraction Management Unit,
 - (ii) the Murrumbidgee Regulated River Water Source, or
 - (iii) the other of these water sources.
- (3) An access licence in either of these water sources may only be issued following cancellation of access licences in another water source if:
- (a) the access licence dealing rules in the other water source permit such a dealing,
 - (b) a conversion factor, established by the Minister and published in an Order made under section 71Z of the Act that protects environmental water, domestic and stock rights, native title rights and the reliability of supply to all other access licences in the water source in which the access licence is being issued, has been applied, and
 - (c) the water source in which the access licence is cancelled is one of the following:
 - (i) the Murrumbidgee Regulated River Water Source, or
 - (ii) the other of these water sources.
- (4) An access licence in the Murray Water Source may only be issued following cancellation of access licences in another water source if the Minister is satisfied that the issue of the licence will not result in the requirement to supply more water allocation from water storages upstream of the Barmah Choke to water access licences downstream of the Barmah Choke.

53 Rules for conversion of access licence category

- (1) This clause relates to dealings under section 71O of the Act.
- (2) Conversion of an access licence of one category to an access licence of another category is prohibited except as provided for under this clause.
- (3) On application of the access licence holder, the Minister may cancel a regulated river (general security) access licence in the Murray Water Source, and issue a

regulated river (high security) access licence in the Murray Water Source, subject to:

- (a) the application of a conversion factor established by the Minister and published in an Order made under section 71Z of the Act that protects environmental water, domestic and stock rights, native title rights and the reliability of supply to all other access licences in the Murray Water Source, and
- (b) the volume of water in the regulated river (general security) access licence water allocation account being equal to or greater than its share component volume.

Note. The volume of water in the regulated river (general security) access licence water allocation account which is in excess of the share component volume of the new regulated river (high security) access licence will not be credited to the new regulated river (high security) access licence account.

- (4) On application of the access licence holder, the Minister may cancel a regulated river (high security) access licence in the Murray Water Source, and issue a regulated river (general security) access licence in the Murray Water Source, subject to:
 - (a) the application of a conversion factor equal to one divided by the conversion factor established in subclause (3), and
 - (b) the total volume of regulated river (general security) access licence share components in the Murray Water Source not increasing above the total volume of regulated river (general security) access licence share components in the water source at the time of commencement of Part 2 of Chapter 3 of the Act.

Note. This would allow conversion of a regulated river (high security) access licence to a regulated river (general security) access licence only if there had been a corresponding or larger volume of regulated river (general security) access licence share component converted to regulated river (high security) access licence in the water source.

- (5) On application of the licence holder, the Minister may cancel a regulated river (conveyance) access licence in the Murray Water Source and issue a regulated river (general security) access licence in the Murray Water Source subject to:
 - (a) the application of a conversion factor established by the Minister that protects the reliability of supply to existing regulated river (general security) access licences, and
 - (b) the total volume of regulated river (general security) access licence share components in the water source not increasing above the total volume of regulated river (general security) access licence share components in the water source at the time of commencement of Part 2 of Chapter 3 of the Act.
- (6) On application of the licence holder, the Minister may cancel a regulated river (conveyance) access licence in the Murray Water Source and issue a regulated river (high security) access licence in the Murray Water Source subject to:
 - (a) the application of a conversion factor established by the Minister that protects the reliability of supply to regulated river (general security) access licences, and
 - (b) the volume of water in the regulated river (conveyance) access licence water allocation account being equal to or greater than its share component volume.

- (7) On application of the access licence holder, the Minister may cancel a domestic and stock access licence and issue a domestic and stock (domestic only) access licence and a domestic and stock (stock only) access licence, subject to:
 - (a) the sum of the share component volumes of the two new access licences being equal to the share component volume of the cancelled access licence, and
 - (b) the share component volume of the new domestic and stock (domestic only) access licence being able to meet the needs of domestic consumption as defined in section 52 of the Act.
- (8) On application of the access licence holder, the Minister may cancel a domestic and stock (stock only) access licence and issue a regulated river (high security) access licence. The number of unit shares in the regulated river (high security) access licence share component shall be equal to the number of megalitres per year in the share component of the cancelled domestic and stock (stock only) access licence.

54 Rules for interstate access licence transfer

- (1) This clause relates to consent given under section 71U of the Act.
- (2) Interstate transfer of access licences is prohibited except as provided for under this clause.
- (3) Access licence equivalents in other States may be transferred into these water sources, subject to the following restrictions:
 - (a) the terms of any relevant interstate agreement, and
 - (b) the application of a conversion factor and any other measures necessary to protect the reliability of supply to remaining regulated river (general security) access licence holders in this water source.
- (4) Access licences in these water sources may be transferred into another State, subject to the following restrictions:
 - (a) the terms of any relevant interstate agreement, and
 - (b) the application of a conversion factor and any other measures necessary to protect the reliability of supply to remaining regulated river (general security) access licence holders in this water source.

55 Rules for water allocation assignment between water sources

- (1) This clause relates to dealings under section 71T of the Act in relation to water allocation assignments between water sources.
- (2) A dealing under this clause is prohibited if it results in a water allocation assignment from an access licence in one of these water sources to an access licence in another water source unless the other water source is:
 - (a) the Murrumbidgee Regulated River Water Source,
 - (b) the Snowy River Water Source, or
 - (c) the other one of these water sources.
- (3) A dealing under this clause is prohibited if it results in a water allocation assignment to an access licence in one of these water sources from an access licence in another water source unless the other water source is:
 - (a) the Murrumbidgee Regulated River Water Source, or

- (b) the other one of these water sources.
- (4) A dealing which would be permitted by subclause (2) (a), (2) (c) or (3) is prohibited if, in the opinion of the Minister the supply of the volume of water allocation to the receiving access licence is not physically possible.
- (5) A dealing which would be permitted by subclause (2) or (3) is prohibited if, in the opinion of the Minister there is more than a minimal likelihood that environmental water, domestic and stock rights, native title rights and the reliability of supply to all access licences in either of these water sources will be effected.

56 Rules for interstate assignment of water allocations

- (1) This clause relates to dealings under section 71V of the Act.
- (2) Water allocation equivalents from other States may only be assigned to the water allocation accounts of access licences in these water sources, subject to:
 - (a) the terms of any relevant interstate agreement, and
 - (b) the application of a conversion factor, established by the Minister and published in an order made under 71Z of the Act and any other measures necessary to protect environmental water, domestic and stock rights, native title rights and reliability of supply to all access licences in these water sources.
- (3) Water allocations from access licence water allocation accounts in these water sources may only be assigned to water allocation equivalents from other States, subject to:
 - (a) the terms of any relevant interstate agreement, and
 - (b) the application of a conversion factor, established by the Minister and published in an order made under 71Z of the Act and any other measures necessary to protect environmental water, domestic and stock rights, native title rights and reliability of supply to all access licences in these water sources.
- (4) A dealing under subclauses (2) or (3) is prohibited if, in the opinion of the Minister:
 - (a) the supply of the water allocation arising from the assignment is not physically possible, or
 - (b) there is more than a minimal likelihood that the dealing will affect environmental water, domestic and stock rights, native title rights and reliability of supply to all access licences in either of these water sources.

Part 11 Mandatory conditions

57 Mandatory conditions on access licences

- (1) This Part is made in accordance with sections 17 (c) and 20 (2) (e) of the Act.
Note. The Minister may impose discretionary conditions at any time on an access licence in accordance with section 66 (1) (b) of the Act.
- (2) All access licences in these water sources shall have mandatory conditions to give effect 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 extraction under the access licence shall be subject to the available water determinations,
 - (d) the requirement that extraction under the access licence shall be subject to the water allocation account management rules established in Part 9 of this Plan,
 - (e) the requirement that the taking of water in accordance with the access licence may only occur if the resulting debit to the access licence account will not exceed the volume of water allocation remaining in the licence account,
 - (f) the requirement that water may only be taken by water supply works nominated on the access licence, and
 - (g) any other conditions required to implement the provisions of this Plan.
- (3) The mandatory condition under subclause (2), in relation to all access licences in the Murray Water Source, other than supplementary water access licences, whose nominated works at the commencement of application of Chapter 3 Part 2 of the Act in relation to this water source are upstream of the Barmah Choke, shall specify that extraction is only permitted upstream of the Barmah Choke.
- (4) All access licences shall have a mandatory condition that facilitates the provisions of clause 48 of this Plan.
- (5) All domestic and stock access licences, local water utility access licences, regulated river (high security) access licences and regulated river (conveyance) access licences shall have mandatory conditions that only allow the taking of water if it has been ordered in accordance with procedures established by the Minister.
- (6) All regulated river (general security) access licences shall have mandatory conditions that only allow the taking of water if it has been ordered in accordance with procedures established by the Minister, except in relation to water extracted under the provisions of clause 39 (10).
- (7) All supplementary water access licences shall have mandatory conditions that only allow the taking of water in accordance with announcements, as specified in clause 49, and after satisfying any procedures established by the Minister.
- (8) All domestic and stock access licences, other than domestic and stock (domestic only) access licences shall have mandatory conditions that only allow the taking of water for the purpose of domestic consumption or stock watering as defined in section 52 of the Act.

- (9) All domestic and stock (domestic only) access licences shall have mandatory conditions that only allow the taking of water for the purpose of domestic consumption as defined in section 52 of the Act.
- (10) 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.
- (11) The access licences referred to in clause 16 (3) shall have mandatory conditions that:
 - (a) only permit the taking of water allocations for the purpose of providing water to Murray River wetlands consistent with the environmental objectives of this Plan, and
 - (b) prohibit dealings under 71M, 71O, 71P, 71Q, 71R and 71U of the Act.
- (12) All regulated river (high security) (Aboriginal cultural) access licences shall have mandatory conditions that only allow the taking of water by Aboriginal persons or communities for personal, domestic and communal purposes including the purposes of drinking, food preparation, washing, manufacturing traditional artefacts, watering domestic gardens, cultural teaching, hunting, fishing, and gathering, and for recreational, cultural and ceremonial purposes.

58 Mandatory conditions on water supply works approvals

- (1) All approvals for water supply works in these water sources shall have mandatory conditions to give effect to the following:
 - (a) flow measurement devices shall be installed and maintained on all works used for extraction of water under an access licence and shall be of a type and shall be maintained in a manner which is acceptable to the Minister,
 - (b) water extraction, property water management infrastructure and cropping details shall be provided on request, in the form and in accordance with procedures established by the Minister, and
 - (c) the taking of water may only occur in accordance with the conditions applying to the access licence from whose water allocation account the taking of water will be debited.
- (2) Subclause (1) does not apply to approvals for water supply works held by State Water provided such an approval is not nominated by an access licence.
- (3) All approvals for water supply works in this water source shall have any other conditions required to implement the provisions of this Plan.

Part 12 System operation rules

59 System operation rules

This Part is made in accordance with section 21 (e) of the Act.

Note. Appendix 6 outlines general operational arrangements which apply to these water sources at the time of Plan gazettal.

60 Replenishment flow

- (1) Replenishment flows may be provided to the Great Anabranch, if required and, subject to subclauses (2) and (3), a volume of 50,000 ML each water year will be reserved for this purpose.
- (2) Replenishments under subclause (1) are subject to water being available from Lake Cawndilla after making provision for the volume of water required to supply those requirements listed in subclause (3) (a) and water allocations in subclause (3) (b) that must be supplied from Lake Cawndilla.
- (3) The volume of water set aside from water available to New South Wales from Menindee Lakes water storages to provide for subclause (1) shall be the lesser of:
 - (a) the volume required to provide the replenishment in subclause (1), and
 - (b) the volume available in the Lower Darling Water Source after making provision for:
 - (i) the requirements of domestic and stock access licences, local water utility access licences and regulated river (high security) access licences for the water year, and
 - (ii) any water allocations carried over in the water allocation accounts of regulated river (general security) access licences.
- (4) The Minister, under section 45 (1) (b) of the Act and by notice published in the Gazette, may replace this clause with alternative provisions, provided that these do not require that more water be provided to the Great Anabranch than would be provided under subclauses (1) to (3).

Note. One option is to replace the current water supply arrangements with a piped water system supplied from the Darling.

61 Water delivery and channel capacity constraints

Where necessary for determining extraction rights, managing water releases or providing water under access licences, the maximum water delivery or operating channel capacity shall be determined and specified in accordance with procedures established by the Minister, taking into account:

- (a) inundation of private land or interference with access,
- (b) the effects of inundation on the floodplain and associated wetlands,
- (c) the transmission losses expected to occur,
- (d) capacities of water management structures controlled by the Minister, and
- (e) the SWOMP targets.

Note. The following capacities have been assessed:

- Hume Dam and Lake Mulwala of 25,000 ML/day,
- Tocomwal Choke of 10,600 ML/day,

- Barmah Choke of 8,500 ML/day,
- Edward River offtake of 1,600 ML/day,
- Gulpa Creek of 350 ML/day, and
- Pooncarie of 20,000 ML/day.

62 Flood operation rules

The operation of all storages during times of flood is to be undertaken in accordance with the Murray Darling Basin Agreement referred to in the *Murray Darling Basin Act 1992*.

63 Airspace

Airspace operation of all storages shall be in accordance with the Murray Darling Basin Agreement as referred to in the *Murray Darling Basin Act 1992*.

Note. The rate of pre-releases from Hume Dam could be increased to 38,500 ML/day subject to the required easements being established. Increasing pre-release rates could benefit wetlands between Hume Dam and Lake Mulwala.

Part 13 Monitoring and reporting

64 Monitoring

The monitoring of the performance indicators identified in clause 12 of this Plan 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. 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 are included in the annual report for the Department.

Part 14 Amendment of this Plan

65 Changes to these water source

The Minister, under section 45 (1) (b) of the Act and by notice published in the Gazette, may add a river or section of river to one of these water sources or remove a river or section of river from one of these water sources providing that:

- (a) any river or section of river that is added has been declared to be a regulated river by an order published in the Gazette, and
- (b) the Minister is satisfied that there will be no impact on environmental water, domestic and stock rights, native title rights or on the water available to any access licences in these water sources.

66 Barmah–Millewa Allowance and Barmah–Millewa Overdraw

The Minister, under section 45 (1) (b) of the Act and by notice published in the Gazette, may vary the rules for the release or taking of water from the Barmah-Millewa Allowance and Barmah Millewa Overdraw specified in subclauses 15 (8) to 15 (15) at any time providing:

- (a) it has been assessed that it there will be no more than a 1% reduction in the long-term volume of water supply available to access licence holders, in the Murray Water Source,
- (b) the only change to subclauses 15 (12) to 15 (15) may be the replacement of 30% with some other percentage,
- (c) the Minister has consulted with the Minister for the Environment, and
- (d) the Minister is of the opinion that the change is not contrary to the environmental objectives of this Plan.

67 Revision of regulated river (conveyance) access licence available water determination rules

The Minister, under section 45 (1) (b) of the Act and by notice published in the Gazette may replace subclauses 38 (3) (a) and 38 (3) (b) with new provisions that provide water allocation volumes that more closely match the loss of water that occurs between the points of offtake of water from this water source and the points of delivery to water users within the Murray Irrigation Limited.

68 Replacement of replenishment flow rules

The Minister, under section 45 (1) (b) of the Act and by notice published in the Gazette, may replace the provisions of clause 60 at any time with alternative arrangements as indicated under clause 60.

Schedule 1 Dictionary

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

airspace is a volume in a **water storage**, which is kept empty for the purpose of mitigating potential floods.

assured inflows are the volumes of water which historic hydrologic information indicates are the minimum which can be expected to flow into the water source.

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.

Barmah Choke for the purposes of this Plan means the Murray River at Picnic Point.

Department is the Department of Infrastructure, Planning and Natural Resources (formerly the Department of Land and Water Conservation) or its successor.

the **Cap** is as defined in Schedule F of the Murray Darling Basin Agreement.

Cap baseline conditions are those used for assessment of Cap in Schedule F of the Murray Darling Basin Agreement and relate to the level of water resource development at June 1994.

downstream of the Barmah Choke means the Murray River downstream of Picnic Point or any river which receives water needed to supply access licence requirements from the Murray River downstream of Picnic Point.

conversion factor refers to the adjustment factor that may be applied to the size of share components when they are part of a dealing under 71O or 71R of the Act.

extraction component is the extraction component of an access licence as defined in 56 (1) of the Act.

floodplain harvesting is the collection or capture of water flowing across floodplains.

long-term average annual extraction is the average of annual water extractions from the water source over the period for which an assessment is carried out.

Minister is the Minister for Land and Water Conservation. The Minister may delegate functions under section 389 of the Act.

Murray Darling Basin Agreement is the agreement between the Commonwealth of Australia and the states of New South Wales, Victoria and South Australia as referred to in the *Murray Darling Basin Act, 1992*, for the purpose of promoting and co-ordinating effective planning and management for the equitable, efficient and sustainable use of the water, land and other environmental resources of the Murray-Darling Basin.

on-farm storage a privately owned water holding structure in which water taken from one of these water sources is often held for later use.

replenishment flows are flows provided to refill pools and water holes in effluent river systems downstream of the water source and provide water for household and town use and stock.

reserves are volumes of water put aside in a **water storage** to allow the supply of future water requirements.

share component is the share component of an access licence as defined in 56 (1) of the Act and, for the purposes of this Plan, any right to take water under the Water Act 1912 that gives rise to share component of an access licence under the Water Management Act 2000 (as amended).

upstream of the Barmah Choke means the Murray River upstream of Picnic Point or any river which receives water needed to supply access licence requirements from the Murray River upstream of Picnic Point.

water storage means a state owned dam, weir or other structure, which is used to regulate and manage river flows in this water source and the water body impounded by this structure.

water supply system includes the water storages and all other factors influencing water supply that are under the control of the Minister.

water use development includes all privately owned water management structures, and all aspects of farm, industry, town or private household development which affect the volumes of water taken from these water sources, and the management practices that are applied in relation to them.

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

Schedule 2 Contribution to relevant targets in the December 2002 State Water Management Outcomes Plan

Levels 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
 N/A target is not applicable to this Plan

Relevant Target	Level of Contribution	Comment
Target 1a Extractions in Murray Darling Basin's regulated rivers limited to the level of the long-term average annual extraction below the Murray Darling Basin Ministerial Council (MDBMC) Cap which results from the long-term impact of the environmental water rules.	FULL	Plan clearly sets out the basis for the long-term extraction limit in Part 8
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.	FULL	Rules set out in Part 8
Target 2 All water 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.	PARTIAL	The environmental water provisions make some improvement on flows compared to Cap The water sources involved in this Plan are however under joint government control. A New South Wales only plan therefore cannot address the majority of environmental issues in this valley. Joint government processes are under way to do this.
Target 4a Where the frequency of "end of system" daily flows would be less than 60 percent of the predevelopment level without environmental water rules or extraction limits, the flows increased to 60 percent of predevelopment levels or increased by at least 10 percent of the predevelopment frequency.	N/A	These water sources are under joint government control. The NSW plan does not therefore manage the total flow regime.
Target 4b Frequency of "end of system" daily very low flows (as defined by local field investigation) protected or restored to predevelopment levels to maintain or restore their critical ecological functions, drought refuges and habitat connectivity. In the absence of such local assessments, protection extended up to at least the predevelopment 95 th percentile.	N/A	These water sources are under joint government control. The NSW plan does not therefore manage the total flow regime.

Relevant Target	Level of Contribution	Comment
<p>Target 4c The channel capacity of all lower river and effluent creek systems used for the delivery of regulated water determined. Subject to reasonable socio-economic impacts, limits on daily supply volumes established for effluent systems such that they do not exceed 80 percent of the channel capacity for more than 10 percent of days in each month of each year. Where daily supply volumes are currently substantially less than channel capacity, alternative limits established to reduce the impact of unseasonal flows arising from future access licence dealings.</p>	PARTIAL	<p>This Plan provides for the determination of maximum operating channel capacities, in accordance with this SWMOP targets.</p> <p>This Plan also provides for the distribution of numerical extraction rights that could be used to facilitate management to desired capacity targets.</p>
<p>Target 5 Access rights for water access licensees clearly and legally specified in terms of share and extraction components.</p>	FULL	<p>Access for existing regulated supply licences and supplementary water access licences are specified and tradeable.</p>
<p>Target 9a Flow thresholds for declaration of supplementary water access, which take into account environmental needs, clearly specified.</p>	HIGH	<p>A variety of flow rules and environmental factors which must be assessed before supplementary water access can be permitted are detailed in this Plan.</p>
<p>Target 9b Annual limits on supplementary water extractions, consistent with the long-term average annual extraction limits, established in all regulated river water sources.</p>	FULL	<p>This Plan sets the maximum annual extraction for supplementary access licences at the full entitlement of 250GL in each water source and allows for a reduction in the maximum in response to any extraction limit exceedance.</p>
<p>Target 9c Rules for sharing between supplementary water licence holders made explicit.</p>	PARTIAL	<p>This Plan does not clearly specify any sharing rules however it does provide for “evenly sharing” access between supplementary water access licences.</p>
<p>Target 9d Supplementary access licence dealings made possible in regulated river water sources, subject to extraction limits and environmental assessment and Aboriginal spiritual and cultural constraints.</p>	FULL	
<p>Target 12 Supplementary access licence dealings made possible in regulated river water sources, subject to extraction limits and environmental assessment and Aboriginal spiritual and cultural constraints.</p>	FULL	<p>Obligations are set out in Part 5</p>
<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>	PARTIAL	<p>Environmental flow rules would be expected to provide benefits to some billabongs and wetlands.</p>
<p>Target 16a All share components of access licences tradeable.</p>	FULL	
<p>Target 16c Conversion factors and protocols established to facilitate trading and dealings between water sources, whilst also protecting existing access and environmental water.</p>	FULL	<p>Transfers between water sources are in line with government policy</p>
<p>Target 16d Reduced conversion factors only applied when necessary to offset increased losses associated with water supply delivery</p>	FULL	<p>This Plan does not impose reduction factors</p>

Relevant Target	Level of Contribution	Comment
Target 16f Zones established where necessary for environmental protection and limits/constraints on water dealings in them made explicit.	PARTIAL	There is no delineation of transfer zones, except for above and below the Barmah Choke.
Target 35 All water management plans incorporating water quality objectives that have considered Government approved Interim Environmental Objectives, the current ANZEC Guidelines and the recommendations of relevant Healthy Rivers Commission Inquiries.	PARTIAL	Plan includes a general water quality objectives. Some water sharing provisions, particularly the supplementary environmental water provisions would be expected to produce benefits in line with the Interim Environmental Objectives..

Appendix 1 Rivers and lakes within the Murray and Lower Darling Regulated River Water Sources

The **New South Wales Murray Regulated River Water Source** includes but is not limited to the following rivers and lakes:

- (i) Barbers Creek from upstream (eastern) boundary in Lot 13, Parish of Moorangatta, County Wakool, to its confluence with the Wakool River in Lot 15, Parish Nunnagoyt, County Wakool,
- (ii) Benanee Creek
- (iii) Black Swan Lagoon,
- (iv) Bookit Creek from its effluence from Merribit Creek between Lots 23 and 39, Parish of Mia Mia, County of Wakool downstream to a dam and regulator located between Lots 4 and 10, Parish of Mia Mia, County of Wakool authorised by Licence L15918,
- (v) Bullanginya Lagoon,
- (vi) Collendina Lagoon,
- (vii) Colligen Creek, from its offtake from the Edward River, Lot 2, DP 857161 Parish of Tumudgery, County of Townsend, downstream to its confluence with the Niemur River within Werai State Forest No. 384, Parish of Werai, County of Townsend,
- (viii) Coobool Creek, from the southern boundary (bridge on disused rail line), of Lot 32, Parish Toolmah, County Wakool, to its confluence with the Wakool River, boundaries of Lots 2 and 3, Parish of Coobool, County Wakool,
- (ix) Dairy Lagoon, offtaking from the Murray River at the southern end of Lot 7014, DP 1021139, in the Reserve 78631, Parish of Corowa, County of Hume,
- (x) Darling River - Wentworth Weir Pool, from the north east corner of Lot 11 DP 756952, Parish of Merche, County of Wentworth downstream to the confluence with the Murray,
Note. The north east corner of Lot 11 DP 756952 has been used to delineate the boundary between the Murray Water Source and the Lower Darling Water as it is a point immediately downstream of the most downstream *Water Act 1912* licence whose allowable water extraction volume was dependent on allocation announcements for the Lower Darling Volumetric Allocation Scheme.
- (xi) Deep Creek, from its confluence with the Murray River between part Lot 19 and Lot 76, Parish of Benarca, County of Cadell to its upper limits within Lot 76, Parish of Benarca, County of Cadell,
- (xii) Dights Creek,
- (xiii) Dry Lake, Parish of Taila, County of Taila,
- (xiv) Edward River; from its offtake from the Murray River downstream to its junction with the Wakool River,
- (xv) Frenchmans Creek,
- (xvi) Gol Gol Channel, the unnamed watercourse known locally as Gol Gol Channel, commencing at a point where Gol Gol Creek enters Gol Gol Swamp downstream to its point of termination with the southern section of Lot 16, Parish Gol Gol, County of Wentworth,
- (xvii) Gol Gol Creek, Parish of Gol Gol, County of Wentworth,

- (xviii) Gol Gol North Creek, Parish of Gol Gol, County of Wentworth,
- (xix) Great Anabranche of the Darling River, from its confluence with the Murray River on Lot 672 DP 761719 to the location of the earthen block bank under Licence 60SL8686, Lot 12 DP 756168,
- (xx) Gulpa Creek,
- (xxi) Gum Creek, from earthen block bank and regulator in Lot 45, Parish Toolmah, County Wakool, to its confluence with the Wakool River, Lot 74, Parish Coobool, County Wakool,
- (xxii) Jingera Jingera Lagoon, from its junction with unnamed watercourse offtaking from the Murray River within Lot 162, Parish of Albury, County of Goulburn, downstream to its confluence with the Murray River,
- (xxiii) Lake Benanee,
- (xxiv) Lake Mulwala,
- (xxv) Lake Victoria,
- (xxvi) Larrys Creek, from its junction with Mulligans Creek in Lot 26, Parish Toolmah, County Wakool, to an earthen block bank and regulator in Lot 45, Parish of Toolmah, County Wakool,
- (xxvii) Lesters Lagoon,
- (xxviii) Little Barbers Creek, offtaking from Merran Creek in Lot 25, Parish Nunnagoyt, County Wakool, to its confluence with Barbers Creek in Lot 25, Parish Nunnagoyt, County Wakool,
- (xxix) Little Murray River; offtaking from the Murray River within Campbells Island State Forest, (in the vicinity of easting 236685, northing 6057818, zone 55) to its confluence with the Murray River at the northern end of Lot 13, DP 756541, Parish of Gonn, County of Wakool,
- (xxx) Merran Creek Cutting, offtaking from the Little Murray River in Campbells Island State Forest, Parish Nunnagoyt, County Wakool, to its confluence with Merran Creek, Lot 14, Parish Nunnagoyt, County Wakool,
- (xxxi) Merran Creek, from block dam and regulator in Lot 21, Parish Nunnagoyt, County Wakool, to its confluence with the Wakool River in Lot 36, Parish Poon Boon, County Wakool,
- (xxxii) Merribit Creek, from its effluence from the Wakool River between Lot 143, Parish of Bookit, County of Wakool and Lot 47, Parish of Mia Mia, County of Wakool to its confluence with the Wakool River between Lot 125, Parish of Toolon, County of Wakool and Lot 46, Parish of Mia Mia and County of Wakool,
- (xxxiii) Moira Creek,
- (xxxiv) Mulligans Creek, offtaking from St Helena Creek in Lot 12, Parish Moorangatta, County Wakool, to its confluence with Larrys Creek in Lot 26, Parish Toolmah, County Wakool,
- (xxxv) Murray River, from the upper limit of the storage of Hume Dam downstream to the South Australian border,
- (xxxvi) Neimur River, from its confluence with Colligen Creek within Werai State Forest No. 384 to its confluence with the Wakool River in Lots 21, Parish of Wetuppa and 48, Parish of Coobool both in the County of Wakool,
- (xxxvii) Nowranie Creek,

- (xxxviii) Paddock Lagoon,
- (xxxix) Porthole Creek, from its confluence with the Wakool River between Lots 3 and 77, Parish of Porthole, County of Cadell upstream to the Boundary between Lots 3 and 72, Parish of Porthole, County of Cadell,
- (xl) Ruel Lagoon,
- (xli) Rufus River,
- (xlii) Salt Creek, from its offtake from the Murray River within WL 165, Parish of Cal Lal, County of Tara to its intersection with the South Australian Border,
- (xliii) Sheepwash Creek
- (xliv) Sheepwash Lagoon, offtaking from the Murray River in Lot 1 DP751155, Parish of Perricoota, County of Cadell and bounded by Lot 1 DP751155, Lot 2 DP521201 and Lot 1 DP131403, Parish of Perricoota, County of Cadell,
- (xlv) St Helena Creek, from a concrete regulator in Lot 3, Parish Moorangatta, County Wakool, to its confluence with the Wakool River in Lot 42, Parish of Toolmah, County Wakool,
- (xlvi) Taila Creek, offtaking from the Murray River in Lot 4441, DP 76426 in the Parish of Taila, County of Taila to Lake Benanee,
- (xlvii) Tallys Lake, from the confluence of the Unnamed Watercourse (Box Creek) in Lot 55, Parish Merran, County Wakool, to the offtake of the Unnamed Watercourse (Box Creek) in Lot 54, Parish Merran, County Wakool,
- (xlviii) Tuckers Creek,
- (xlix) unnamed lagoon, (known locally as Cemetery Creek), offtaking in part Temporary Common, Parish of Euston, County of Taila,
- (l) unnamed lagoon, (known locally as Doctors Point Lagoon) offtaking from Murray River between Lots 317 and 26, Parish of Albury, County of Goulburn,
- (li) unnamed lagoon and watercourse, (known locally as Parlour or Howlong Creek), offtaking from the Murray River within Lot 63, Parish of Bungowannah, County of Hume, to its junction with Lesters Lagoon,
- (lii) unnamed lagoon, offtaking from Colligen Creek in Lot 6, Parish of Tumudgery, County of Townsend,
- (liii) unnamed lagoon, offtaking from Murray River in Lot 2, Parish of Boomanoomana, County of Denison,
- (liv) unnamed lagoon, offtaking from the Murray River between Lots 16 and 18, Parish of Woperana, County of Denison,
- (lv) unnamed lagoon, offtaking from the Murray River between Lots 29 and 65, Parish of Quat Quatta, County of Hume, and also between Lots 20 and 68,
- (lvi) unnamed lagoon, offtaking from the Murray River in Lot 10, Parish of Wangumma, County of Tara,
- (lvii) unnamed lagoon, offtaking from the Murray River in Lot 4, Parish of Collendina, County of Hume,
- (lviii) unnamed lagoon, offtaking from the Murray River in W.L. 673, Parish of Moorna, County of Tara,
- (lix) unnamed lagoon, offtaking from the Murray River within Lot 298 Parish of Corowa, County of Hume,

- (lx) unnamed lagoons, connected to the Murray River and situated within Lots 298, 297 and 299, Parish of Corowa, County of Hume,
- (lxi) unnamed lagoons, connected to the Murray River and situated within Lots 298, 297 and 299, Parish of Corowa, County of Hume,
- (lxii) unnamed watercourse, anabranch of the Murray River offtaking between Lots 80 and 83, forming the northern boundary of Lot 79, traversing Lot 92 and rejoining the Murray River within Lot 29, Parish of Quat Quatta, County of Hume,
- (lxiii) unnamed watercourse and effluents, (known locally as Breakaway Creek) offtaking from the Murray River in Lot 14, Parish of Bungowannah, County of Hume,
- (lxiv) unnamed watercourse and effluents, (known locally as Yellowbelly Creek) offtaking from the Murray River in Lot 3, Parish of Bungowannah, County of Hume,
- (lxv) unnamed watercourse and lagoon, connecting Lesters Lagoon with Black Swan Lagoon, Parish of Howlong, County of Hume,
- (lxvi) unnamed watercourse, (Box Creek), offtaking from Coobool Creek in Lot 48, Parish Toolmah, County Wakool, to Tallys Lake in Lot 55, Parish Merran, County Wakool,
- (lxvii) unnamed watercourse, (Box Creek), Offtaking from Tallys Lake in Lot 54, Parish Merran County Wakool, to earthen block dam and pipe regulator in Lot 12, Parish Merran, County Wakool,
- (lxviii) unnamed watercourse, (known as Hemp Creek) offtaking from the Bookit Creek in Lot 4 DP756559, Parish of Mia Mia, County of Wakool to the eastern boundary of Lot 4 DP756559, Parish of Mia Mia, County of Wakool,
- (lxix) unnamed watercourse, (known locally as Boilingdown Creek), offtaking from the Murray River within Lot 524, Parish of Corowa, County of Hume, and rejoining the Murray River within Collendina State Forest No. 98, block 1,
- (lxx) unnamed watercourse, (known locally as Hans Creek), offtaking from the Murray River, within Lot 199, Parish of Corowa, County of Hume,
- (lxxi) unnamed watercourse, (known locally as Horseshoe Lagoon), offtaking from the Murray River between Lots 12 and 46, Parish of Tocumwal, County of Denison,
- (lxxii) unnamed watercourse, connected to the Edward River within section 60, Town of South Deniliquin, Parish of South Deniliquin, County of Townsend, for a distance of 200 metres south easterly from the point of connection,
- (lxxiii) unnamed watercourse, connecting Washpen Creek with Lake Caringay,
- (lxxiv) unnamed watercourse, from its offtake from the Edward River in Lot 78 (T S & C R 35646) Parish of Tumudgery, County of Townsend to its confluence with Colligen Creek in Lot 47 Parish of Tumudgery, County of Townsend,
- (lxxv) unnamed watercourse, offtaking from an unnamed lagoon within that part of Collendina State Forest No. 98 east of Lot 9, Parish of Collendina, County of Hume,
- (lxxvi) unnamed watercourse, offtaking from another unnamed watercourse within Lot 64, Parish of Bungowannah, County of Hume, and traversing downstream successively, in a north westerly direction, Lots 275, 257, 241, 240, 248, 249, 250, 251, 172 and 171 Parish of Howlong, County of Hume to its confluence with Lesters Lagoon,
- (lxxvii) unnamed watercourse, offtaking from Gum Creek in Lot 49, Parish Toolmah, County Wakool, to its confluence with Coobool Creek in Lot 49, Parish Toolmah, County Wakool,

- (lxxviii) unnamed watercourse, offtaking from the Murray River within Lot 162, Parish of Albury, County of Goulburn, downstream to its confluence with Jingera Jingera Lagoon,
- (lxxix) unnamed watercourse, offtaking from the Murray River within Lot 23, Parish of Albury, County of Goulburn,
- (lxxx) unnamed watercourse, offtaking from the Murray River within Lot 34, Parish of Albury, County of Goulburn,
- (lxxxi) unnamed watercourse, offtaking from the Murray River within Lot 5, Parish of Wangumma, County of Tara,
- (lxxxii) unnamed watercourse, offtaking from the Murray River within Lot 56, Parish of Bungowannah, County of Hume,
- (lxxxiii) unnamed watercourse, offtaking from the Murray River within that part of Mulwala State Forest No 100 west of Lot 209, Parish of Mulwala, County of Denilson,
- (lxxxiv) Wakool River, from its offtake on the Edward River downstream to its confluence with the Murray River,
- (lxxxv) Washpen Creek, to a point 805 metres upstream of the junction of the Unnamed Watercourse connecting Washpen Creek with Lake Caringay, and
- (lxxxvi) Yallakool Creek, from its effluence from the Edward River between TS & CR 25840, Parish of Brassi, County of Townsend and Lot 78, Parish of Tumudgery, County of Townsend and its confluence with the Wakool River between Lot 54, Parish of Gobran, County of Townsend and Lot 3, Parish of Corry, County of Wakool.

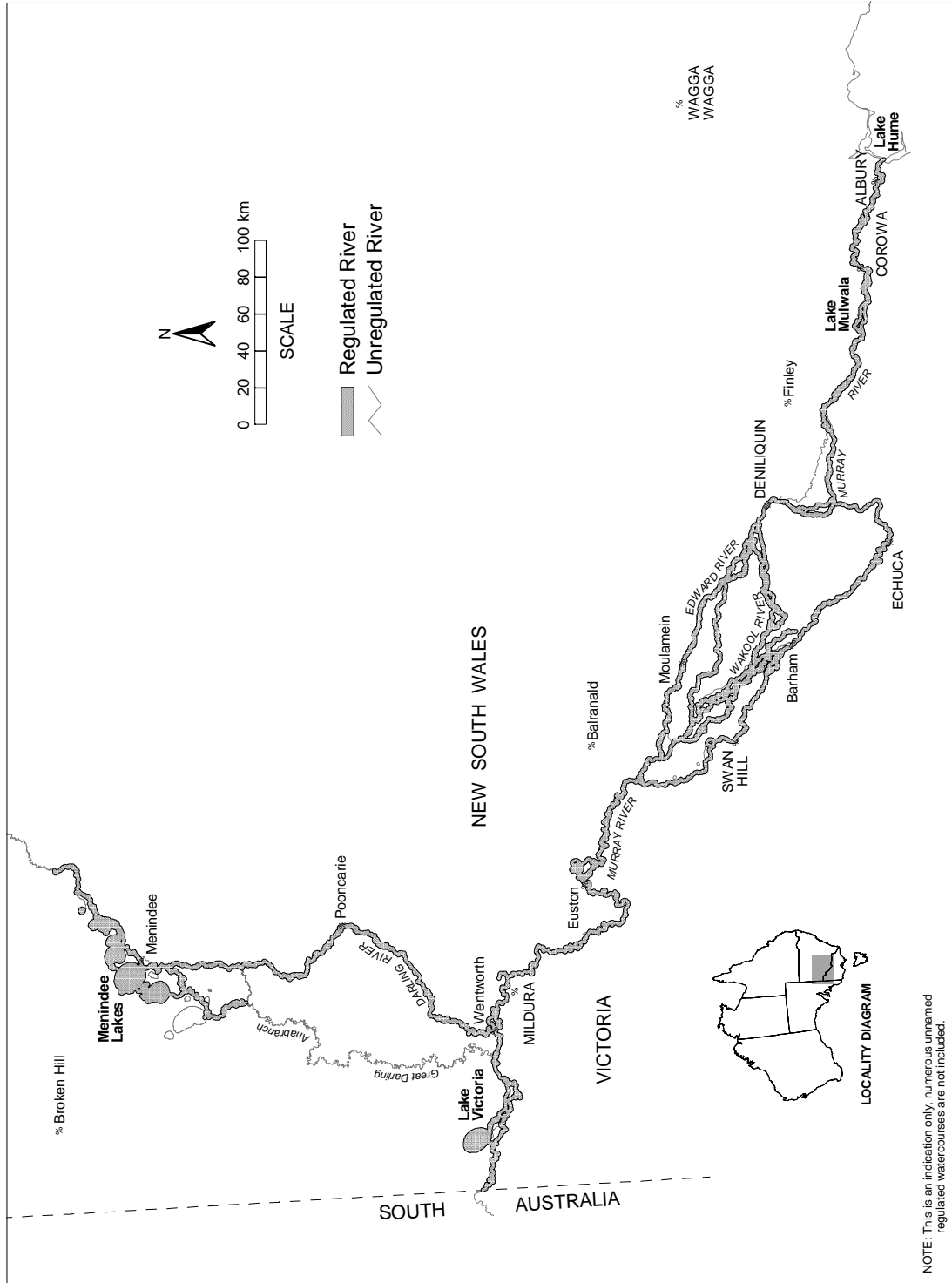
The **Lower Darling Regulated River Water Source** includes but is not limited to the following rivers and lakes:

- (i) Balaka Lake,
- (ii) Bijijie Lake,
- (iii) Cawndilla Creek,
- (iv) Copi Hollow,
- (v) Darling River; from adjacent to "Billilla Homestead" on Lot 3671, DP 766053, County of Livingstone (grid ref. YKD35760 Wilcannia 1:100 000), downstream to the north east corner of Lot 11 DP 756952, Parish of Merche, County of Wentworth,
- (vi) Lake Cawndilla,
- (vii) Lake Menindee,
- (viii) Lake Pamamaroo,
- (ix) Lake Spectacle,
- (x) Lake Speculation,
- (xi) Lake Wetherell,
- (xii) Malta Lake,
- (xiii) Menindee Creek,
- (xiv) Pamamaroo Creek,
- (xv) Redbank Creek; from Lake Tandou, downstream to the crossing situated within Lot W.L. 3345, Parish of Mitta, County of Menindee, known locally as Packers Crossing,

- (xvi) Tandou Creek; where it off takes from the southern most end of Cawndilla Channel (DP 767272, at easting 614946, northing 6391413, Zone 54) traversing Lot 2123 DP 764065 Parish of Bintullia, County of Menindee, Lot 2125 DP 764067 Parish of Bintullia, County of Menindee, and DP 767026 Parish of Mitta, County of Menindee, to where it joins Tandou Lake (Lot 3345 DP 765601 Parish of Mitta, County of Menindee, at easting 602179, northing 6380223, Zone 54),
- (xvii) Tandure Lake, and
- (xviii) unnamed lagoon; offtaking from the Darling River within Lot 89 Parish of Avoca County of Wentworth.

Note. The Great Anabranch of the Darling River receives domestic and stock replenishment flows from this Plan's area, but does not itself form part of this Plan's area.

Appendix 2 NSW Murray and Lower Darling Region



Appendix 3 State floodplain harvesting principles

Section 1 Definition and categories of floodplain harvesting

- (1) Floodplain harvesting is the collection, extraction or impoundment of water flowing across floodplains. The floodplain flows can originate from local runoff that has not yet entered the main channel of a river, or from water that has overflowed from the main channel of a river during a flood. For the purposes of this policy the floodplain is defined as extending to the 1 in 100 year flood line.
- (2) Floodplain harvesting can generally be put into one of three categories:
 - (a) diversion or capture of floodplain flows using purpose built structures or extraction works to divert water into storages, supply channels or fields or to retain flows,
 - (b) capture of floodplain flows originating from outside of irrigated areas using works built for purposes other than floodplain harvesting. Examples are:
 - (i) levees and supply works such as off river storages constructed in billabongs or depressions that fill from floodplain flows, and
 - (ii) below ground level water channels from which the water is pumped into on farm storages, and
 - (c) opportunistic diversions from floodplains, depressions or wetlands using temporary pumps or other means.

Note. Capture of rainfall or runoff from farm irrigation fields, via tailwater systems or other means, is not floodplain harvesting.

Section 2 Floodplain harvesting management issues

- (1) The harvesting of water from floodplains reduces the amount of water reaching or returning to rivers. This decreases the amount of water available to meet downstream river health, wetland and floodplain needs and the water supply entitlements of other users.
- (2) Floodplain harvesting can seriously affect the connectivity between the local floodplain, wetlands and the river, through the loss of flow volume and redirection of water flows.
- (3) The *Water Act 1912* provided powers to license floodplain harvesting. However this was never applied as there was generally no requirement to restrict total overall water extractions or off-allocation diversions. Harvested floodplain water has been treated as a freely available bonus to a farmer's licensed entitlement.
- (4) This situation has now changed. The Murray-Darling Basin cap applies to all water diverted from inland NSW catchments and rivers. Licensed and off-allocation access has been subject to increasing restrictions. Embargoes on water licences are also in place on many areas on the coast.
- (5) Floodplain harvesting works and water extractions also clearly fall into those activities that the *Water Management Act 2000* requires to be only undertaken by way of a licence. The Act also requires such licensing to consider the ecological functioning of floodplains.
- (6) Floodplain harvesting can no longer be left outside of the State's water management and compliance system or as a source of increase in further water extractions. Given this, it is the Government's intention that floodplain harvesting works and taking of water from floodplains be licensed and managed. It will take a

number of years to complete the process. However, the water sharing plans must signal the basic principles that will govern the process.

Section 3 Management of floodplain harvesting

- (1) Floodplain harvesting will not be a component of individual water sharing plans being produced for the regulated and unregulated rivers. During flood times water originating in one river system may flow across floodplains and along “flood runners” into adjacent river systems. It is therefore often not possible to assign an area of floodplain to a particular river.
- (2) Management of floodplain harvesting will occur on a state-wide basis, according to the six principles set out in section 4.
- (3) There are many thousands of existing floodplain works which will require licensing and this will be done over the next couple of years. The licensing process will include proper environmental impact assessments.
- (4) A separate category of licence will be established.

Section 4 Floodplain harvesting principles

- (1) Principle 1 is that all existing floodplain harvesting works and floodplain harvesting extractions will be licensed.
- (2) Principle 2 is that licensing will focus initially on controlling the structures, but with movement towards specifying volume limits and flow related access conditions, including metering of pumps

Note. While all surface and groundwater licences now (or will shortly) specify volume entitlements or annual limits to water, it is not possible to do this for floodplain harvesting licences at this stage. This is because the pattern of use is highly episodic and site and infrastructure specific, and current data on structures and use is minimal.

The Department of Infrastructure, Planning and Natural Resources will licence existing structures and specify monitoring of use (including metering of pumps) as a licence condition where possible. This may not be possible initially in cases where a tailwater system is also picking up floodplain water as they are difficult to separate, or where overland flow is being captured by a billabong for which we do not have any information on its capacity. Options for application of volumetric conditions will be developed and implemented where appropriate within the first five years of the initial water sharing plans.

- (3) Principle 3 is that no new works or expanded floodplain harvesting activities in the Murray-Darling Basin that will result in the diversion of additional water will be authorised.

Note. All new floodplain harvesting works are required by law to be licensed. However, as any new works would result in a growth in diversion, which would threaten river health and/or the water entitlements of others, such works would have to be offset by a reduction in other forms of water diversion.

- (4) Principle 4 is that floodplain diversions associated with works in place in the Murray-Darling Basin prior to the end of the 1994 irrigation season will be considered as within the NSW cap.

Note. Because cap is based on the use of water with development as it was in 1994, NSW considers that the water use that would result from use of the floodplain infrastructure in place in 1994, is part of the cap in each system.

- (5) Principle 5 is that once licensing is completed, an assessment of long-term use resulting from authorised structures against that from structures which existed in 1994 will be carried out and appropriate steps taken to keep harvesting to cap levels.

Note. It is likely that there has been some growth in floodplain harvesting works and extractions since 1994. However, it is expected that the licensing process will result in some modification of existing works. This may be adequate to offset any post 1994 development. If not, restrictions on the use of the licensed works will have to be applied to return diversions to cap levels. Such restrictions could include restrictions on pumping times or a requirement to modify the work to allow a proportion of flows to be bypassed. By preventing the construction or enlargement of new works, the opportunity for any further growth in floodplain harvesting diversions will be minimised.

- (6) Principle 6 is that floodplain harvesting rights will not be tradeable.

Note. Trading of floodplain harvesting rights will not be permitted because the frequency and volume of use is site and infrastructure specific, and volume management will take some time to implement.

Appendix 4 Performance indicators

Performance indicator	Related objective	As measured by	Commentary
(a) Change in ecological condition of the water source and dependent ecosystems.	clauses 10 (a) to 10 (f) clause 10 (h)	<ul style="list-style-type: none"> Monitoring of ecological response to changed flow regimes, by IMEF (each water source will have specific hypotheses from the set developed under IMEF). Other relevant studies as may be undertaken in specific water sources. 	<ul style="list-style-type: none"> IMEF tests a number of hypotheses to indicate how elements of river ecology respond to different aspects of the flow regime (including EFRs, irrigation flows, and floods and wetland connectivity).
(b) Change in low flow regime	clause 10 (a) clause 10 (c) clause 10 (e) clause 10 (i)	<ul style="list-style-type: none"> Number of days per water year where flow is below natural 95th and 80th percentiles. Average and maximum number of days per water year of continuous periods of flow which is below natural 95th and 80th percentiles. Measurement at end of system and specified key sampling sites. 	<ul style="list-style-type: none"> Government's River Flow Objectives (RFOs) 1 and 6. Analysis would need to incorporate reference to seasonal indicators. Long term modelling will reflect the influence of climate on flows. Appropriate data relating to flow distribution, eg summer/winter cropping balance, agronomical practices, on farm storage development, management and operation of environmental releases etc. Baseline audit should be the modelled WSP scenario (rather than natural flows).
(c) Change in moderate to high flow regime	clauses 10 (a) to 10 (h)	<ul style="list-style-type: none"> Number of days per water year where flow is above natural 30th 15th and 5th percentiles. Average and maximum number of days per water year of continuous periods of flow which is above natural 30th, 15th and 5th percentiles. Measurement at end of system and other key sampling sites in the water source. 	<ul style="list-style-type: none"> RFO 3

Performance indicator	Related objective	As measured by	Commentary
(d) Change in water quality	clause 10 (i)	<ul style="list-style-type: none"> Assessment and statistical analysis of key water quality parameters, and relationship to flow. 	<ul style="list-style-type: none"> The Plan rules will contribute to a long-term change in water quality by affecting flow regimes and flow management to address issues such as algal management. There are many non-Water Sharing Plan related factors that affect water quality (eg land-based activities and thermal pollution).
(e) Extent to which basic landholder rights requirements have been met	clause 10 (j)	<ul style="list-style-type: none"> Basic rights allowances made according to plan provisions/implementation program requirements. Flows adequate to meet basic rights requirements (taking into consideration allowances for delivery). 	<ul style="list-style-type: none"> Basic rights usage figures in water sharing plans are estimated volumes (not actual use). Basic rights represents a very small proportion of water extraction in regulated systems.
(f) Extent to which local water utility and major utility requirements (where major utilities are involved in urban water provision) have been met.	clause 10 (k)	<ul style="list-style-type: none"> Percentage of years that reserves were adequate to satisfy urban water requirements. 	

Performance indicator	Related objective	As measured by	Commentary
(g) Change in economic benefits derived from water extraction and use	clause 10 (k)	<ul style="list-style-type: none"> • Change in regional gross margins versus annual total extractions based on year 1 benchmarks (as represented in IQQM). • Movement of water to higher value crops as measured by increases in area and/or water extracted by these enterprises versus lower value uses. • Change in unit price of water transferred. • Annual total volume of access licence transferred (ML) in each water year. 	<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 (eg groundwater). • The PI is intended to isolate as much as possible the effects of water availability and price on the gross margin returns at a regional level. • Assessment undertaken as part of plan performance monitoring will make assumptions to attempt to identify the impact of this Plan's provisions.
(h) Extent of recognition of spiritual, social and customary values of water to Aboriginal people.	clause 10 (k)	<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. 	<ul style="list-style-type: none"> • 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 water source, as a minimum requirement.
(i) Extent to which native title rights have been met.	clause 10 (k)	<ul style="list-style-type: none"> • Native title rights allowances made according to plan provisions/implementation program requirements. 	

Appendix 5 Operational guidelines for delivering flows prescribed by the Murray Darling Basin Agreement

The following operational guidelines are to operate so that they do not contravene Parts V to XI of the Murray Darling Basin Agreement nor the intentions of that Agreement where they relate to the interstate sharing for the responsibility for the environmental management of the Murray – Lower Darling Rivers.

Note. Unless otherwise stated the flows noted in this section are provided out of combined resources as per the Murray Darling Basin Agreement.

Provide 1,850 GL per annum to the Murray at the South Australian Border

A total contribution of 1,850 GL per annum is provided to the South Australian Border as per the Murray Darling Basin Agreement. This is a minimum flow and is assented to by the Basin State Governments as well as the Commonwealth Government. The plan is constrained by the need to provide the daily flows indicated below.

Total Contribution to South Australian Entitlement

Month	Monthly entitlement Total contribution (ML)	Daily flow at the South Australian Border (ML/day)
January	217,000	7,000
February	194,000	6,929
March	186,000	6,000
April	135,000	4,500
May	93,000	3,000
June	90,000	3,000
July	108,500	3,500
August	124,000	4,000
September	135,000	4,500
October	170,500	5,500
November	180,000	6,000
December	217,000	7,000
Total	1,850,000	

Additional Dilution Flow to South Australia

In 1987, as part of the MDBC Salinity and Drainage Strategy, it was agreed that South Australia would be entitled to additional water to mitigate the impacts of surface water salinity. This volume, known as additional dilution flow, is only provided when the storage volumes in the Menindee Lakes exceed nominated trigger points, at the same time the combined storage volume of Hume and Dartmouth Reservoirs also exceed nominated triggers. The trigger volumes within the Menindee Lakes vary between months.

When these trigger volumes are exceeded, South Australia is entitled to an additional flow of 3,000 ML/day, 1,500 ML of which is from NSW resource.

It is recognised that these additional dilution flows have contributed to the reduction in the impact of salinity. It is recommended, however, that these additional dilution flows be monthly totals rather than daily totals so that greater flexibility is available which can be translated into maximising both salinity and ecological outcomes.

Storage level triggers for additional dilution flow to South Australia

Figures are ML	Jan	Feb	March	April	May	June
Menindee Lakes trigger	1,300,000	1,300,000	1,300,000	1,300,000	1,300,000	1,650,000
Hume/Dartmouth trigger	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000

Figures are ML	July	Aug	Sept	Oct	Nov	Dec
Menindee Lakes trigger	1,650,000	1,500,000	1,300,000	1,300,000	1,300,000	1,300,000
Hume/Dartmouth trigger	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000

Minimum flows from Hume Dam

Minimum flows from combined resources are to be maintained out of Hume Dam to ensure that down stream diversion needs are met, as well as for environmental maintenance and water quality purposes. The minimum flows are currently as follows:

- (c) Minimum flows downstream of Hume Dam up stream of the Kiewa River are 600 ML/day.
- (d) Minimum flows downstream of Hume Dam at Doctors Point are 1,200 ML/day.

Minimum flows downstream of the Curlwaa pumps on the Murray

Minimum flows from combined resources are to be maintained downstream of the Curlwaa Irrigation District pumps on the Murray River during summer to ensure that down stream diversion needs are met, as well as for environmental maintenance and water quality purposes. The recommended minimum flow is 1,200 ML / day during summer.

- (e) The rates may be reduced below their minimum recommended flows if river conditions are not conducive to the production of blue green algae as determined by the Department of Infrastructure, Planning and Natural Resources in consultation with the MDBC.

Minimum flows from Menindee Lakes to the Lower Darling River

In order to maintain appropriate minimum flow rates from the Menindee Lakes to the Lower Darling River to maintain water quality and river health and minimise the occurrence of algal blooms the following are recommended minimum releases from Weir 32.

- (f) The rates may be reduced below their minimum recommended flows if river conditions are not conducive to the production of blue green algae as determined by the Department of Infrastructure, Planning and Natural Resources in consultation with the MDBC.

Minimum recommended flows for the mitigation of blue green algae in the Lower Darling River

Month	ML/day
Jan	350
Feb	350
Mar	350
Apr	300
May	200
Jun	200
Jul	200
Aug	200
Sep	200
Oct	200
Nov	300
Dec	300

Using Barmah Millewa Environmental Water Allocation to Provide Flow to the Werai Forest

Flows that are provided for flooding to the Barmah Millewa Forests under environmental flow rule and which are diverted through the Edward / Wakool system are to be managed to provide flood flows to the Werai Forest below Stevens Weir where possible.

Acceptance of Rainfall Rejection Events

- (g) NSW is to accept rainfall rejection events in the Murray River above the Barmah Choke every second year. NSW is to manage rainfall rejection events in the Murray River above the Barmah Choke in the year 2001.
- (h) Victoria manages rainfall rejection events in the alternate years.
- (i) NSW management of rainfall rejection is to mitigate the detrimental effects that such unseasonal flows would have on the forest ecosystems within the influence of the Barmah Choke.

Winter Draw down of Stevens Weir Pool

- (j) Maintain the Stevens weir pool at summer irrigation supply level until one week after the Easter school holidays;
- (k) At the time the summer irrigation season demands are reducing, Stevens weir pool is to be drawn down in steps equivalent to reduction in demand;
- (l) Weir pool draw down rates are to be no greater than 150 mm / day except where a greater rate reflects natural conditions;
- (m) Weir pool reinstatement rates (rise) are to be no greater than 300 mm / day except where a greater rate reflects natural conditions;
- (n) Unregulated flows into the Edward River are to be passed through Edward / Wakool river system alternately to the Wakool river and the Edward river down stream of Stevens weir.

- (o) If unregulated flows have not occurred by mid August to raise Stevens weir pool, the weir pool will be raised slowly in accordance with irrigation season start up requirements using regulated supply.

Winter Weir Pool Manipulation – Rise and Draw Down

Where possible all weir pools, including Lake Wetherell, and Lock 9, along the NSW Murray and Lower Darling rivers are to be managed for winter draw down in a similar manner as that of Stevens weir pool, as relates to their specific hydrology.

Rates of Rise and Fall

In order to minimise bank deterioration and unless natural conditions or other environmental flows dictate otherwise the following rates of rise and fall are to apply within the river channel.

i) Weir pools and Rivers, Streams and Waterways

- (p) Weir draw down rates be no greater than 150 mm per day except where a greater rate reflects natural conditions;
- (q) Weir pool reinstatement rates (rises) to be no greater than 300 mm per day except where a greater rate reflects natural conditions.

Lower Darling Flows from Menindee Lakes

- (r) Where total storage volume in the Menindee Lakes will exceed 1,680,000 ML, flow release patterns should be implemented which provides a hydrograph of similar shape to that of a ‘natural flood event’, consistent with the protection of property as far as possible.
- (s) Following extended periods of high flow greater than three weeks, apply the following recommended rates of reductions and monitor and record the effect of this action:
- (t) For within channel flows greater than 20,000 ML/day downstream of Menindee, reduce at a
- (u) similar rate of recession as occurred upstream of the lakes at Wilcannia.
- (v) For flows greater than 10,000 ML/day and less than 20,000 ML/day, releases should be reduced at no greater than 1,000 ML/day each day.
- (w) For flows greater than 5,000 ML/day and less than 10,000 ML/day, releases should be reduced at no greater than 500 ML/day each day.
- (x) For flows less than 5,000 ML/day, releases should be reduced at no greater than 250 ML/day each day.

Menindee Lakes

Environmental flows for the Menindee Lakes are not included in this Plan.

Great Anabranche of the Darling River

The Great Anabranche of the Darling River is not part of this Plan’s area. However, under an agreement between the Department of Infrastructure, Planning and Natural Resources and the Great Anabranche of the Darling River Water Trust, replenishment flows may be provided from NSW resources. Provision of supply depends on the availability of adequate water and on there being a need for additional water for domestic and stock purposes.

The present arrangements require a volume of approximately 50,000 megalitres per year. These may be replaced within the life of this Plan, with a likely option being a piped water supply

system servicing landholdings along the Great Anabranh. Water would be pumped from the Darling and a licence or licences issued to secure the required water for the Anabranh landholders.

Appendix 6

(renumbered as Appendix 5)

Historical notes

The following abbreviations are used in the Historical notes:

Am	amended	No	number	Schs	Schedules
Cl	clause	p	page	Sec	section
CII	clauses	pp	pages	Secs	sections
Div	Division	Reg	Regulation	Subdiv	Subdivision
Divs	Divisions	Regs	Regulations	Subdivs	Subdivisions
GG	Government Gazette	Rep	repealed	Subst	substituted
Ins	inserted	Sch	Schedule		

Table of amending instruments

Water Sharing Plan for the Murray and Lower Darling Regulated Rivers Water Source 2003 published in Gazette No 52 of 26.2.2003, p 3204 and amended as follows:

Water Management (Ministers' Plans) Amendment Order 2003 (GG No 101 of 20.6.2003, p 5804 (see also GG No 104 of 27.6.2003, p 6352))

Water Management (Ministers' Plans) Further Amendment Order 2003 (GG No 197 of 19.12.2003, p 11451)

Water Management (General) Regulation 2004 (GG No 110 of 1.7.2004, p 5008)

Water Management (Minister's Plans) Order No 2 of 2004 (GG No 110 of 1.7.2004, p 5072)

Table of amendments

Cl 1	Subst 1.7.2004.
Cl 3	Am 20.6.2003; 19.12.2003.
CII 4, 15, 16, 18, 19	Am 1.7.2004.
CII 22–27	Subst 1.7.2004.
Cl 29	Am 1.7.2004.
Cl 31	Am 1.7.2004; 2004 No 91, Sch 2.110 [1].
Cl 34	Am 1.7.2004.
CII 35–40, 43	Subst 1.7.2004.
Cl 44	Am 1.7.2004.
Cl 46, 47	Subst 1.7.2004.
CII 49-50	Am 1.7.2004.
Cl 51	Am 1.7.2004; 2004 No 91, Sch 2.110 [2].
Cl 52	Am 1.7.2004.
CII 53, 55	Subst 1.7.2004.
Cl 57	Am 1.7.2004; 2004 No 91, Sch 2.110 [3].
Cl 58	Subst 1.7.2004.
Cl 60	Am 1.7.2004.
Cl 64-68	Subst 1.7.2004.
Sch 1	Am 1.7.2004; 2004 No 91, Sch 2.110 [4].
Appendix 1	Subst 1.7.2004.
Appendix 5 (as originally enacted)	Rep 1.7.2004.
Appendix 5 (formerly)	Ins. 1.7.2004.

Appendix 6)	
Appendix 6	Renumbered as Appendix 5, 1.7.2004
The whole plan	Am 1.7.2004 (“section 42 (2)” omitted wherever occurring in relation to references to the Water Management Act 2000 , “section 45 (1) (b)” inserted instead; “section 71A” omitted wherever occurring in relation to references to the Water Management Act 2000 , “section 71M” inserted instead; “section 71B”, “section 71C”, “section 71D”, “section 71E”, “section 71F”, “section 71G”, “section 71H”, “section 71I”, “section 71J”, “section 71K” and “section 71L” omitted wherever occurring in relation to references to the Water Management Act 2000 , “section 71O”, “section 71P”, “section 71Q”, “section 71R”, “section 71S”, “section 71T”, “section 71U”, “section 71V”, “section 71W”, “section 71Y” and “section 71Z” inserted instead, respectively; “environmental health water” and “supplementary environmental water” omitted wherever occurring, “planned environmental water” inserted instead).