

Water Sharing Plan for the Hunter Regulated River Water Source 2003 (2004 SI 432)

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New South Wales

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

Notes—

- **See also**
[Statute Law \(Miscellaneous Provisions\) Bill \(No 2\) 2004](#)

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Contents

Part 1 Introduction	6
1 Name of Plan	6
2 Nature and status of this Plan	6
3 Date of commencement	6
4 Area and waters to which this Plan applies	6
5 Interpretation	7
6 Effect on licences, authorities and permits under the Water Act 1912	7
7 State Water Management Outcomes Plan	8
8 Management zones, flow reference sites, river reaches and reach gauges.....	8
Part 2 Vision, objectives, strategies and performance indicators	8
9 Vision, objectives, strategies and performance indicators.....	8
10 Vision.....	8
11 Objectives.....	8
12 Strategies	9
13 Performance indicators.....	10
Part 3 Environmental water provisions	10
14 Environmental water provisions	10
15 Planned environmental water.....	10
16 Planned environmental water.....	11
17 Adaptive environmental water	12

Part 4 Basic landholder rights	12
18 Basic landholder rights	12
19 Domestic and stock rights	12
20 Native title rights	13
Part 5 Bulk access regime	14
21 Bulk access regime	14
Part 6 Requirements for water under access licences	14
22 Requirements for water under access licences	14
23 Share component of domestic and stock access licences	15
24 Share component of major utility access licences	15
25 Share component of local water utility access licences	15
26 Share component of regulated river (high security) access licences	15
27 Share component of regulated river (general security) access licences	16
28 Share component of supplementary water access licences	16
29 Changes to total share component	16
Part 7 Rules for granting of access licences	16
30 Access licence applications	16
Part 8 Limits to the availability of water	17
Division 1 Long-term extraction limit	17
31 Limit to the availability of water	17
32 Volume of the long-term extraction limit	17
33 Assessment of current long-term average annual extraction	18
34 Maintaining compliance with the long-term extraction limit	18
Division 2 Available water determinations	19
35 Available Water Determinations	19
36 Available water determinations for domestic and stock access licences	19
37 Available water determinations for major utility access licences	20
38 Available water determinations for local water utility access licences	20
39 Available water determinations for regulated river (high security) access licences and for regulated river (general security) access licences	

.....	21
40 Available water determinations for supplementary water access licences.....	23
Part 9 Rules for managing access licences.....	25
Division 1 General.....	25
41 Rules for managing access licences.....	25
Division 2 Water allocation account management.....	25
42 Water allocation accounts.....	25
43 Accrual of water allocations accounts.....	25
44 Volume taken under access licences.....	25
45 Accounting of assigned allocations and return flows.....	26
46 Carrying over of water allocation credits and water allocation account limits.....	26
47 Barnard Reserve account management.....	28
Division 2 Extraction conditions.....	28
48 General priority of extractions.....	28
49 Numerical specification of extraction components.....	29
50 Access to uncontrolled flows.....	29
51 Extraction under supplementary water access licences.....	30
Part 10 Dealings with access licences.....	31
52 Access licence dealings.....	31
53 Rules relating to constraints within this water source.....	32
54 Rules for change of water source.....	33
55 Rules for conversion of access licence category.....	33
56 Rules for interstate access licence transfer.....	35
57 Rules for water allocation assignment between water sources.....	35
58 Rules for interstate assignment of water allocations.....	35
Part 11 Mandatory conditions.....	36
59 Mandatory conditions on access licences.....	36
60 Mandatory conditions on water supply works approvals.....	37
Part 12 System operation rules.....	38

61 System operation rules.....	38
62 Water delivery and channel capacity constraints	38
63 Rates of change to releases from water storages.....	38
64 Dam operation during floods and spills	39
65 Airspace operation rules.....	39
Part 13 Monitoring and reporting.....	39
66 Monitoring	39
Part 14 Amendment of this Plan	40
67 Revision of the water source boundary and Plan area.....	40
68 Changes to the Management of the Barnard Reserve account.....	41
69 Increase in the management zone 1 limit in relation to dealings	41
Dictionary	42
Schedule 2 Contribution to relevant targets in December 2002 SWMOP	43
Schedule 3 Management zones and flow reference sites	46
Appendix 1 Rivers in the Hunter Regulated River Water Source.....	47
Appendix 2 Hunter Water Management Area.....	48
Appendix 3 State floodplain harvesting principles	48
Appendix 4 Performance indicators	51

Water Sharing Plan for the Hunter Regulated River Water Source 2003 (2004 SI 432)



New South Wales

Part 1 Introduction

1 Name of Plan

This Plan is the *Water Sharing Plan for the Hunter Regulated River Water Source 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* (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 gazettal and ceases 10 years after that date.

4 Area and waters to which this Plan applies

- (1) The water source in respect of which this Plan is made is:
 - (a) between the banks of all rivers, from the upstream limit of Glenbawn Dam water storage downstream to the estuary of the Hunter River, and from the upstream limit of Glennies Creek Dam water storage downstream to the junction with the Hunter River, which at the date of commencement of this Plan have been declared by the Minister to be regulated rivers, and
 - (b) the unconsolidated alluvial sediments underlying the waterfront land of all rivers referred to in subclause (a), except those unconsolidated alluvial sediments within one metre of works taking water pursuant to licences issued under Part 5 of the *Water Act 1912* or their equivalent aquifer access licences issued under the Act.

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 subclause (1) are listed in Appendix 1.

Note—

Waterfront land has the meaning defined in the Act.

- (2) The water source shall be known as the Hunter Regulated River Water Source (hereafter ***this water source***).
- (3) The rivers included in this water source may be varied, clause 4 (1) (b) replaced and other changes made to this Plan under section 45 (1) (b) of the Act as set out in Part 14 of this Plan.
- (4) This water source is within the Hunter Water Management Area as constituted by the Ministerial Order published in the NSW Government Gazette (hereafter ***the Gazette***) on 23 November 2001.

Note—

The Hunter Water Management Area is shown on the map in Appendix 2.

Note—

Management of floodplain harvesting is not a component of this water sharing plan. 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 those targets.

8 Management zones, flow reference sites, river reaches and reach gauges

Management zones, flow reference sites, river reaches and reach gauges referred to in this Plan are those defined in Schedule 3.

Part 2 Vision, objectives, strategies and performance indicators

9 Vision, objectives, strategies and performance indicators

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

10 Vision

- (1) The vision for this Plan is to achieve a healthy, diverse and productive regulated river water source providing sustainable management of the water source for the community, environment, towns, agriculture and industry.
- (2) This Plan also recognises the following respect statement for Aboriginal values in the regulated river water source:

Life giving water is of extreme significance to Aboriginal culture for its domestic, traditional and spiritual values. Whilst water supplied for the environment will provide protection for native flora and fauna, fishing, food gathering and recreational activities, it is important that the community respects the spiritual significance of water to the Aboriginal people.

11 Objectives

The objectives of this Plan are to:

- (a) protect the natural seasonal variation of low flows during dry periods,
- (b) protect the initial flow in natural freshes,
- (c) protect a high proportion of moderate and high flows,
- (d) protect a high proportion of the natural inundation pattern and distribution of floodwaters supporting natural wetland and floodplain ecosystems,

- (e) mimic natural flow variability of medium and high flows,
- (f) maintain rates of rise and fall river heights within their natural bounds for medium and high flows,
- (g) provide a reserve of water that can be used to assist in management of environmental contingencies,
- (h) contribute to maintenance of estuarine processes and habitats,
- (i) contribute to maintenance of the ecological condition of this water source and its riparian areas over the longer term,
- (j) mitigate the impacts of instream structures,
- (k) mitigate downstream water quality impacts of storage releases,
- (l) maintain water supply priority for basic rights for domestic and stock access licences at all times,
- (m) maintain a highly reliable supply of water to towns to meet the existing and potential population needs of urban communities,
- (n) provide clarity of rights of access to water for the major utility,
- (o) maintain a highly reliable supply water to the major utility access licence,
- (p) provide clarity of rights for holders of regulated river (high security) access licences,
- (q) provide a defined level of water supply access to the irrigation industry,
- (r) provide clarity of access to supplementary water,
- (s) contribute to protection of recreational and tourism opportunities, and
- (t) recognise priority for traditional water rights of Aboriginal people.

12 Strategies

The strategies for reaching the objectives set out in clause 11 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).

13 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 this water source and dependent ecosystems,
- (b) change in low flow regime,
- (c) change in moderate to high flow,
- (d) change in water quality in this water source,
- (e) extent to which basic landholder rights requirements have been met,
- (f) extent to which local water utility and major utility requirements 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 assessing indicators.

Part 3 Environmental water provisions

14 Environmental water provisions

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

15 Planned environmental water

This Plan establishes the following planned environmental water rules:

- (a) water volume in excess of the long-term extraction limit established in clause 32 of this Plan may not be taken from this water source and used for any purpose,
- (b) water availability is to be managed as specified in clause 34 of this Plan to ensure

water volume in excess of the long-term extraction limit is not being taken,

Note—

By limiting long-term extractions to 217,000 Megalitres per year, this Plan ensures that approximately 80% of long-term average flow in this water source (estimated to be 1,040,000 megalitres per year) will be preserved and will contribute to the maintenance of basic ecosystem health.

- (c) this water source shall be managed to ensure that flows, in megalitres per day (hereafter **ML/day**), exceed those listed in the following table:

Flow reference site	December to February	March to May	June to August	September to November
1. (Liddell)	17 ML/day	18 ML/day	56 ML/day	38 ML/day
3. (Greta)	36 ML/day	40 ML/day	73 ML/day	61 ML/day

and,

- (d) sufficient volumes of water are to be held in reserve in storage to ensure these flows can be provided through a repeat of the worst drought in this water source for which reliable flow information is available.

16 Planned environmental water

- (1) This Plan establishes the following planned environmental water rules for the management of an environmental contingency allowance:
- (a) at the start of each water year a total of 20,000 megalitres in Glenbawn and Glennies Creek water storages is to be reserved in an environmental contingency allowance account for release as specified in subclause (b),
 - (b) releases of water from the environmental contingency allowance account are to be made in accordance with procedures established by the Minister to assist in management of critical environmental events, such as algal blooms and chemical spills, and to provide flows at critical times for purposes such as fish migration or stony bed scouring,
 - (c) the volume of releases under subclause (b) debited to the environmental contingency allowance account is to be the volume of releases in excess of those necessary to meet all other water requirements, and
 - (d) any volume remaining in the environmental contingency allowance account at the end of a water year is to be forfeited from the account.
- (2) This Plan establishes the following planned environmental water rule in relation to periods when access to uncontrolled flows is declared under clause 50 or supplementary water access licences are permitted to extract water under clause 51:
- (a) 50% of the daily flow in each river reach defined in Schedule 3 is to be protected

during periods when access to uncontrolled flows or access under supplementary water access licences is declared.

Note—

In addition to these rules, there are significant restrictions on the proportion of flow that can be taken during each water year and when extractions under supplementary water access licences can occur (see Part 8 Division 2 and Part 9 Division 2 of the Act). These rules do not meet the Act's definition of planned environmental water, because they do not "commit" water to the environment as they do not prevent use of these flows to supply water allocated to access licences, other than supplementary water access licences. Nevertheless, they will result in the protection of a major proportion of medium to high flows for the environment and ensure that these flows pass through this water source into the Hunter estuary. It is anticipated that, in all but the most exceptional years, at least 70% of total annual flows in this water source in excess of the 40th percentile flow level will pass through to the estuary.

17 Adaptive environmental water

- (1) At any time an access licence holder can, by a process determined by the Minister, commit all or part of their licence as adaptive environmental water.
- (2) The conditions of the commitment specified in subclause (1):
 - (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) At the commencement of this Plan there are no access licences committed to an environmental purpose in accordance with section 8 (1) (c) of the Act.

Part 4 Basic landholder rights

18 Basic landholder rights

This Part is made in accordance with sections 5 (3) and 20 (1) (b) of the Act.

19 Domestic and stock rights

Note—

Water from this water source should not be consumed without prior treatment, which is adequate to ensure its safety.

- (1) It is estimated that at the time of commencement of Part 2 of Chapter 3 of the Act, the water requirements of holders of domestic and stock rights will total 5,515 megalitres per year (hereafter **ML/year**) and that these will be distributed between the management zones defined in Schedule 3 in the following way:
 - (a) 2,592 ML/year in management zone 1,

(b) 2,375 ML/year in management zone 2, and

(c) 548 ML/year in management zone 3.

(2) This Plan recognises that the exercise of domestic and stock rights may increase during the term of this Plan.

Note—

Increase in use of domestic and stock rights may occur as a result of an increase in the number of landholdings fronting this water source or as a result of an increase in the exercise of domestic and stock rights on existing landholdings.

(3) The water supply system 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 this water source, as represented in flow information held by the Department.

(4) To achieve subclause (3), sufficient volumes of water must be set aside from assured inflows into this water source and in reserves held in Glenbawn Dam and Glennies Creek Dam water storages.

Note—

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

20 Native title rights

Note—

Water from this water source 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 this water source and therefore native title rights are 0 ML/year.

(2) This Plan recognises that the exercise of native title rights may increase during the term of this Plan.

Note—

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

(3) The water supply system 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 this water source, as represented in flow information held by the Department.

(4) To achieve subclause (3) sufficient volumes of water must be set aside from assured inflows into this water source and in reserves held in Glenbawn Dam and Glennies

Creek Dam water storages.

Part 5 Bulk access regime

21 Bulk access regime

- (1) This Part is made in accordance with section 20 (1) (e) of the Act.
- (2) Plan establishes a bulk access regime for the extraction of water under access licences in this water source having regard to:
 - (a) the environmental water provisions identified 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

22 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 this water source. There is no commitment to make these volumes available. The actual volumes available at any time will depend on climate, access licence priority and the rules in this Plan.

23 Share component of domestic and stock access licences

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 access licences authorised to extract water from this water source will total 1,681 megalitres and that these will be distributed between the management zones defined in Schedule 3 in the following way:

- (a) 725 ML/year in management zone 1,
- (b) 827 ML/year in management zone 2, and
- (c) 186 ML/year in management zone 3.

24 Share component of major utility access licences

It is estimated that at the time of commencement of Part 2 of Chapter 3 of the Act, the share components of major utility access licences authorised to extract water from this water source will total 36,000 ML/year.

Note—

Macquarie Generation also hold other entitlements to access water, but these are not major utility access licences as defined by the Act.

25 Share component of local water utility access licences

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 access water from this water source will total 10,832 ML/year and that these will be distributed between the management zones defined in Schedule 3 in the following way:

- (a) 2,000 ML/year for Scone/Aberdeen,
- (b) 3,250 ML/year for Muswellbrook
- (c) 550 ML/year for Denman,
- (d) 5,000 ML/year for Singleton, and
- (e) 32 ML/year for Jerry's Plains.

26 Share component of regulated river (high security) 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 (high security) access licences authorised to access water from this water source will total 21,766 unit shares and that these will be distributed between the management zones defined in Schedule 3 in the following way:

- (a) 10,378 unit shares in management zone 1,
- (b) 10,016 unit shares in management zone 2, and

- (c) 1,765 unit shares in management zone 3.

27 Share component of regulated river (general security) 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 (general security) access licences authorised to access water from this water source will total 130,026 unit shares and that these will be distributed between the management zones defined in Schedule 3 in the following way:

- (a) 75,035 unit shares in management zone 1,
- (b) 47,078 unit shares in management zone 2, and
- (c) 6,050 unit shares in management zone 3.

28 Share component of supplementary water access licences

- (1) Supplementary water access licences in this water source will be specified as a number of shares in the water available to supplementary water access licences.
- (2) It is estimated that at the time of commencement of Part 2 of Chapter 3 of the Act, the supplementary water access licences authorised to access water from this water source will total 49,000 unit shares.

29 Changes to total share component

This Plan recognises that total requirements for water 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 of access licences

30 Access licence applications

- (1) This Part is made in accordance with sections 20 (2) (b) and 63 of the Act.
- (2) Access licences may be granted in this water source, 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 this water source, other than for access licences of the following kinds:
 - (a) regulated river (high security)—(Aboriginal cultural) access licences, providing that the application does not exceed 10 megalitres per year,
 - (b) regulated river (high security—research) access licences 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

- (c) specific purpose access licences for which applications are provided for under the regulations in accordance with section 61 (1) (a).
- (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., or
 - (b) an access licence dealing.

Part 8 Limits to the availability of water

Division 1 Long-term extraction limit

31 Limit to the availability of water

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

32 Volume of the long-term extraction limit

- (1) This Plan establishes a long-term extraction limit for this water source of an average of 217,000 ML/year.

Note—

The long-term extraction limit established by this Plan is sufficient to allow water extractions to grow by 30% above their current level, and full use of all access licences referred to in Part 6. Should there be a demand for greater volumes of water to service industry or agriculture in the future, the Plan limit may be reviewed. However, any increase would only occur after an assessment of the various ways in which additional water supply could be provided and full consideration of potential environmental effects socio-economic benefits and the impacts, if any, on the rights under existing access licences.

- (2) At the end of each water year the Minister may, under section 45 (1) (b) of the Act alter the volume referred to in subclause (1) as a result of any access licence dealing under section 71R of the Act during that water year.
- (3) For the purposes of auditing compliance with the long-term extraction limit, the following will be included:
 - (a) all water extractions under all categories of access licences,
 - (b) domestic and stock rights and native title rights extractions,
 - (c) volumes of water delivered as adaptive environmental water,

- (d) floodplain harvesting extractions determined to be taken for use in conjunction with extractions from this water source, and
 - (e) assignment of water allocations from the water allocation accounts of access licences in this water source to the water allocation accounts of access licences in other water sources.
- (4) For the purposes of auditing compliance with the long-term extraction limit 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 this water source.

33 Assessment of current long-term average annual extraction

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

34 Maintaining compliance with the long-term extraction limit

- (1) The long-term average annual extraction from this water source shall not be permitted to exceed the long-term extraction limit specified in clause 32.
- (2) Pursuant to subclause (1), the maximum total allocation provided by available water determinations in any water year in respect of supplementary water access licences, and if necessary, regulated river (general security) access licences shall be reduced if:
- (a) it has been assessed that the current long-term average annual water extraction from this water source exceeds the long-term extraction limit specified in clause 32 by 3%, or
 - (b) assessments in accordance with clause 33 for 3 consecutive years indicate that the current long-term average annual extraction from this water source exceeds the long-term extraction limit.
- (3) The degree of reduction under subclause (2) shall be the degree that is assessed necessary to return the long-term average annual extraction from this water source to the long-term extraction limit.
- (4) The first reduction method used under subclause (2) shall be to reduce the water volumes made available to supplementary water access licences by reducing the

value of “A” applied to calculations under clause 40 (4).

- (5) Once no extractions under supplementary water access licences are allowed as a result of sub-clause (4), then the limit to the sum of allocations made to regulated river (general security) access licences specified in clause 39 shall be reduced.
- (6) If the total volume of water made available in any water year has been reduced as a result of subclause (2), and a subsequent assessment of extractions performed under clause 33 indicates that long-term average annual extractions are below the long-term extraction limit by more than 3%, then previous reductions under subclause (2) may be reversed to the degree that it is assessed necessary to return extractions to the long-term extraction limit.
- (7) Any reversal of previous reductions shall:
 - (a) first be applied to regulated river (general security) access licences, and
 - (b) not exceed the previous reductions made under subclause (2).
- (8) The assessment of the degree of reduction required under subclause (2) or degree of reversal under subclause (6) shall be made using the same computer model used to carry out assessments of extractions compared to the long-term extraction limit under clause 33.

Division 2 Available water determinations

35 Available Water Determinations

- (1) This Division is made in accordance with section 20 (2) (b) of the Act.
- (2) All available water determinations in this water source shall be expressed as:
 - (a) a percentage of the share component, for all categories of access licence where share components are specified as ML/year,
 - (b) megalitres per unit share for all categories of access licence where share components are specified as unit shares.

36 Available water determinations for domestic and stock access licences

- (1) The water supply system 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 this water source, represented in flow information held by the Department.
- (2) Sufficient volumes of water must be set aside from assured inflows into this water source and reserves held in Glenbawn Dam and Glennies Creek Dam water storages to provide for subclause (1).

- (3) The available water determination for domestic and stock access licenses made for the commencement of each water year shall be 100% of share components whenever possible.
- (4) The sum of allocations made for domestic and stock access licences in any water year shall not exceed 100% of share components.
- (5) This Plan recognises that the water requirement of domestic and stock access licences may increase during the term of this Plan in accordance with clause 30.
- (6) The volumes of water set aside from assured inflows into this water source and reserves held in Glenbawn Dam and Glennies Creek Dam water storages shall be adjusted as required over the course of this Plan if necessary to do so, to ensure that subclause (1) is satisfied.

37 Available water determinations for major utility access licences

- (1) The water supply system shall be managed so that available water determinations for major utility licences of 100% of share components can be maintained through a repeat of the worst period of low inflows to this water source, represented in flow information held by the Department.
- (2) Sufficient volumes of water must be set aside from assured inflows into this water source and reserves held in Glenbawn Dam and Glennies Creek Dam water storages to provide for subclause (1).
- (3) The available water determination for major utility access licences made for the commencement of each water year shall be 100% of share component, whenever possible.
- (4) The sum of allocations made for major utility access licences in any water year shall not exceed 100% of the share component.
- (5) The volumes of water set aside from assured inflows into this water source and reserves held in Glenbawn Dam and Glennies Creek Dam water storages shall be adjusted as required over the course of this Plan if it is believed necessary to ensure that subclause (1) is satisfied.

38 Available water determinations for local water utility access licences

- (1) The water supply system 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 this water source, represented in flow information held by the Department.
- (2) Sufficient volumes of water must be set aside from assured inflows into this water source and reserves held in Glenbawn Dam and Glennies Creek Dam water storages

to provide for subclause (1).

- (3) The available water determination for local water utility access licenses made for the commencement of each water year shall be 100% of share component whenever possible.
- (4) The sum of available water determinations made for local water utility access licences in any water year shall not exceed 100% of share components.
- (5) This Plan recognises that the water requirement of local water utility access licences may increase during the term of this Plan in accordance with clause 30 of this Plan and section 66 of the Act.
- (6) The volumes of water set aside from assured inflows into this water source and reserves held in Glenbawn Dam and Glennies Creek Dam water storages shall be adjusted as required over the course of this Plan if it is necessary to do so, to ensure subclause (1) is satisfied.

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

- (1) The sum of available water determinations to regulated river (high security) access licences in any water year shall not exceed 1 megalitre per unit share.
- (2) The sum of allocations to regulated river (general security) access licences in any water year shall not exceed 1 megalitre per unit share, or such lower amount as results from the operation of clause 34.
- (3) Available water determinations for regulated river (high security) access licences and regulated river (general security) access licences shall be made at the commencement of each water year.
- (4) If the available water determinations made under subclause (3) are less than the maximum amount referred to in subclause (1) or subclause (2), then further assessments of available water shall be carried out during the water year and available water determinations made until the sums of available water determinations for the water year are equal to the maximum amounts referred to in subclause (1) or subclause (2).
- (5) No available water determination is to be made for regulated river (general security) access licences in any water year, until:
 - (a) the sum of available water determinations for regulated river (high security) access licences in the water year reaches 0.75 megalitres per unit share, and
 - (b) there is sufficient water to guarantee an available water determination for regulated river (high security) access licences in the following water year of at least 0.75 megalitres per unit share.

- (6) If an assessment of available water indicates that there is more than sufficient water to satisfy subclause (5), then available water determinations shall be made such that for each 0.01 megalitres per unit share by which the sum of available determinations for regulated river (high security) access licences exceeds 0.75 megalitres per unit share there is an 0.02 megalitres per unit share increase in the sum of available determinations for regulated river (general security) access licences, until the sum of available water determinations for regulated river (high security) access licences is 1 megalitre per unit share.
- (7) Once the sum of available water determinations for regulated river (high security) access licences is 1 megalitre per unit share, then any additional available water shall be made available to regulated river (general security) access licences, subject to the limit at subclause (2).
- (8) Available water determinations made for regulated river (high security) access licences and regulated river (general security) licences must take into account:
 - (a) the environmental water provisions established by this Plan,
 - (b) requirements for domestic and stock rights,
 - (c) requirements for native title rights,
 - (d) requirements for domestic and stock access licences,
 - (e) requirements for major utility access licences,
 - (f) requirements for local water utility access licences,
 - (g) allocations remaining in access licence water allocation accounts from previous available water determinations,
 - (h) water losses associated with holding and delivery of water to meet the requirements specified in subclauses (a) to (g),
 - (i) an appropriate volume to meet water losses associated with the holding and delivery of water resulting from the available water determination,
 - (j) water held in the Barnard Reserve account under clause 47, and
 - (k) any other relevant matters.
- (9) Whenever the sum of available water determinations for regulated river (high security) access licences in a water year is less than 1 megalitre per unit share, available water determinations shall also indicate that:
 - (a) water may be extracted without debit to regulated river (high security) access licence accounts from uncontrolled flows as specified in clause 50 of this Plan,

providing that:

- (b) that the volume extracted under subclause (a) is to be in accordance with announcements by the Minister, and
- (c) that the sum of extractions taken under subclause (a) in a water year and the water allocations accrued from available water determinations in that water year, is limited to 1 megalitre per unit share of the regulated river (high security) access licence.

(10) Whenever the sum of available water determinations for regulated river (general security) access licences in a water year is less than 1 megalitre per unit share of share components, available water determinations shall also indicate that:

- (a) water may be extracted without debit to regulated river (general security) access licence accounts from uncontrolled flows, as specified in clause 50 of this Plan, providing that,
- (b) the volume extracted under subclause (a) is to be in accordance with announcements by the Minister, and
- (c) the sum of extractions taken under subclause (a) in a water year and the water allocations accrued from available water determinations in that water year, is limited to 1 megalitre per unit share of the regulated river (general security) access licence.

(11) Announcements made in relation to subclauses (9) (a) and 10 (a) shall be such that:

- (a) the total volume extracted under subclauses (9) and (10) at any point in a water year, during periods when supplementary water access licences are also permitted to take water, is no more than 11% of the annual high flow tally calculated in accordance with clause 40,
- (b) the extractions that are permitted during periods of access to uncontrolled flows do not result in flows being reduced below those necessary to satisfy all environmental water provisions and the volume required to supply basic landholder rights and higher priority licences, and
- (c) the total volume of water each licence is permitted to extract under subclauses (9) and (10) is proportional to the share component volume of the licence.

40 Available water determinations for supplementary water access licences

- (1) An annual high flow tally and an annual supplementary water tally shall be kept for the purpose of making available water determinations for supplementary water access licences in this water source.
- (2) At the start of each water year the annual high flow tally and the annual

supplementary water tally shall be set to zero.

- (3) For each day during the water year when flows are sufficient to permit extraction of water by supplementary water access licences in accordance with clause 51 a volume, calculated according to the following formula, shall be added to the annual high flow tally:

$$\text{Volume added} = C + D + E$$

where

C is the lesser of the daily flow at flow reference site 3 and 2,040 megalitres.

D is the volume of water extracted by supplementary water access licences on that day.

E is the volume of water extracted by regulated river (general security) access licences and regulated river (high security) access licences on that day, pursuant to the provisions of an available water determination made in accordance with clauses 39 (9) or 39 (10).

- (4) At any time during the water year the volume of the annual supplementary water tally shall be

$$A \times B$$

(the volume of the annual high flow tally), where:

A is the lesser of 100% and the percentage resulting from the operation of Part 8 Division 1 of this Plan, and

B is 19%.

- (5) The first available water determinations for supplementary water access licences in each water year shall provide a volume per supplementary water access licence unit share which is equal to the current annual supplementary water tally, divided by the number of supplementary water access licence unit shares in this water source.
- (6) Each available water determinations subsequent to the first of each water year shall provide a volume per supplementary water access licence unit share which is equal to the difference between the current annual supplementary water tally and the annual supplementary water tally upon which the previous available water determination was based, divided by the number of supplementary water access licence unit shares in this water source.

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), 21 (c) and 85 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 this water source.

43 Accrual of water allocations accounts

Water allocations will be accrued into water allocation accounts in accordance with the Minister's available water determinations made under Part 8 Division 2 of this Plan.

44 Volume taken under access licences

- (1) The water allocation taken under domestic and stock access licences, local water utility access licences, regulated river (high security) access licences and 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, or
 - (b) where the Minister has applied such a discretionary condition to the access licence, the greater of:
 - (i) the volume of water extracted by the approved water supply works nominated by the access licence, and
 - (ii) the volume of water ordered for extraction by the approved water supply works nominated by the access licence.
- (2) The Minister should only apply a discretionary condition in relation to subclause (1) (b) where this has been provided for in a compliance management strategy, approved by the Minister.

- (3) The water allocation taken under a major utility access licence shall be assessed as stated on the relevant access licence.
- (4) The allocation taken under a regulated river (high security) access licence will be debited from the water allocation account subject to the provisions of clause 39 (9) and relevant available water determinations.
- (5) The allocation taken under a regulated river (general security) access licence will be debited from the water allocation account subject to the provisions of clause 39 (10) and relevant available water determinations.
- (6) The allocation taken under supplementary water access licences will be the volume of water extracted, in accordance with announcements made and access licence conditions, by the approved water supply works nominated by the access licence.

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 and water allocation account limits

- (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 and supplementary water access licences at the end of each water year may not carry over into the following water year.
- (2) Water allocation remaining in a water allocation account of a major utility access licence may be carried over into the next water year subject to:
 - (a) the volume carried over not exceeding 32,400 megalitres, and
 - (b) the volume of water in Glenbawn Dam water storage, minus any allowance for dead storage, exceeding 25% of the conservation storage volume.

Note—

The conservation storage volume of Glenbawn Dam water storage is the volume between the invert of the lower outlet works and the start of the flood mitigation zone. The dead storage is the volume below the invert of the lower outlet works.

- (3) Water allocation remaining in a water allocation account of a regulated river (general security) access licence may be carried over to the next water year subject to:

- (a) the volume carried over not exceeding 10% of the share component volume of the access licence, and
 - (b) an assessment that the available water determination for regulated river (general security) access licences for the beginning of the next water year will provide an allocation equal to or exceeding 50%.
- (4) If water is spilled from Glenbawn Dam, either over its spillway or as a release of water through the Dam for the purpose of maintaining airspace in the flood mitigation zone or for the safety of the Dam and, the volume spilled exceeds the volume held in the Barnard Reserve water account at the commencement of the spill, then allocation shall be withdrawn in the following order:
- (a) firstly, from each regulated river (general security) access licence water allocation account in proportion to the carryover remaining in the account at the time of spill, and
 - (b) secondly, from the major utility access licence water allocation account.
- (5) The volume of water withdrawn from regulated river (general security) access licence water allocation accounts under subclause (4) shall be the lesser of:
- (a) the total of the carryover remaining in the regulated river (general security) access licence water allocation accounts, and
 - (b) the volume of spill minus the volume held in the Barnard Reserve account at the commencement of the spill.
- (6) The volume of water withdrawn from the major utility access licence water allocation account under subclause (5) shall be the lesser of:
- (a) the total of the carryover remaining in the major utility access licence water allocation account, and
 - (b) the volume of spill minus the volume held in the Barnard Reserve account at the commencement of the spill minus the volume of allocation withdrawn from regulated river (general security) access licence water allocation accounts under subclause (5).
- (7) For the purposes of subclauses (5) and (6), the carryover remaining in each access licence water allocation account shall be the greater of:
- (a) the volume of allocation carried over from the previous water year under subclause (2) or subclause (3), minus any allocation already taken during the current water year, and
 - (b) zero.

47 Barnard Reserve account management

- (1) The volume of water moved by Macquarie Generation or its successor, from the Barnard River to Glenbawn Dam water storage shall be calculated and administered as set out in this clause and shall be held in a Barnard Reserve account.
- (2) The volume of water held in the Barnard Reserve account at any time may not exceed 60,000 megalitres.
- (3) Subject to subclause (2), the Barnard Reserve account is to be credited with the volume of water moved from the Barnard River to the Hunter Water Management Area, less any transmission losses between the point of entry of the water into the Hunter Water Management Area and its point of entry into the Glenbawn Dam water storage.
- (4) The Barnard Reserve account shall be debited by the volume of water released from the Glenbawn Dam water storage to supply orders for water from the Barnard Reserve account, placed by Macquarie Generation or its successor.
- (5) The volume released from the Glenbawn Dam water storage to supply orders from the Barnard Reserve account shall be the volume ordered plus the volume of transmission loss assessed to be associated with the delivery of the order from Glenbawn Dam to the point of extraction from this water source.
- (6) When Glenbawn Dam spills, either over the spillway or by release from the flood mitigation zone, the volume of water held in the Barnard Reserve account is to be debited by the lesser of:
 - (a) the volume of spill, and
 - (b) the volume remaining in the Barnard Reserve account.
- (7) Evaporation of Barnard Reserve account water held in the Glenbawn Dam water storage is to be assessed and debited from the account.
- (8) This clause may be varied under section 45 (1) (b) of the Act as set out in Part 14 of this Plan.

Division 2 Extraction conditions

48 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 of time, the following priority of extractions shall apply whenever supply capability is insufficient to satisfy all order for water in any section of this water source:

- (a) water shall be supplied to domestic and stock access licences, major utility access

licences, local water utility licences, regulated river (high security) access licences that have placed orders for water, and

- (b) then any remaining supply capability shall be shared between regulated river (general security) access licences that have placed an order, in proportion to the share components specified on the access licences.

49 Numerical specification of extraction components

- (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 this water source, or in any section of this water source.
- (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 and regulated river (high security) access licence should be sufficient to satisfy the maximum daily water needs, and
 - (c) after satisfying subclause (b), the remaining supply capability should be distributed among regulated river (general security) access licences in proportion to the share component of each access licence.
- (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 this water source to exclude extractions in sections of this water source affected by the action under subclause (1).

50 Access to uncontrolled flows

- (1) Periods of access to uncontrolled flows in relation to clauses 39 (9) and 39 (10) may be announced by the Minister whenever all the following circumstances are occurring:
 - (a) the sum of available water determinations for regulated river (general security) access licences in a water year is less than 1 megalitres per unit share, and
 - (b) flows are sufficient to permit water to be taken under supplementary water access licences.
- (2) Periods of access to uncontrolled flows in relation to clauses 39 (9) and 39 (10) may also be announced by the Minister whenever all the following circumstances are occurring:
 - (a) the sum of available water determinations for regulated river (general security) access licences in a water year is less than 0.75 megalitres per unit share,

- (b) flows are insufficient to permit water to be taken under supplementary water access licences, and
 - (c) flows are in excess of those necessary to satisfy all environmental water provisions and the volume required to supply basic landholder rights and higher priority access licences.
- (3) Extractions in each river reach are to be managed to ensure that the total volume of water extracted on any day under all access licences, domestic and stock rights and native title rights do not exceed 50% of the total inflows to the river reach.
- (4) Access to uncontrolled flows shall be shared in proportion to the number of unit shares of access licences.

51 Extraction under supplementary water access licences

- (1) The taking of water under supplementary water access licences shall only be permitted in accordance with announcements made by the Minister.
- (2) In river reaches 1A and 1B, extraction of water by supplementary water access licences:
- (a) shall only be allowed to commence if the flows at the reach gauge in the immediately preceding period have been sufficient to ensure that the excess flows at flow reference sites 1, 2 and 3 will exceed the threshold flows in subclause (5) for at least 12 hours, and
 - (b) shall only be allowed to continue while flows at the reach gauge are sufficient to ensure that the resulting excess flows at flow reference sites 1, 2 and 3 will continue to exceed the threshold flows in subclause (5).
- (3) In river reaches 2A, 2B and 3A extraction of water by supplementary water access licences:
- (a) may only be allowed to commence if the flows at the reach gauge in the immediately preceding period have been sufficient to ensure that the excess flows at flow reference sites 2 and 3 will exceed the threshold flows in subclause (5) for at least 12 hours, and
 - (b) may only be allowed to continue while flows at the reach gauge are sufficient to ensure that the resulting excess flows at flow reference sites 2 and 3 will continue to exceed the threshold flows in subclause (5).
- (4) The excess flow for the purposes of permitting extraction under supplementary water access licences under subclauses (2) and (3) is the flow at a point in the river that is in excess of that needed to supply downstream:
- (a) environmental water provisions as specified in Part 3,

- (b) domestic and stock rights and native title rights requirements,
 - (c) higher priority access licence requirements, and
 - (d) any losses expected to be involved in supplying water in accordance with the environmental water provisions as specified in Part 3 and to meet domestic and stock and native title rights requirements and higher priority access licence requirements.
- (5) Threshold flows for the purposes of permitting extraction under supplementary water access licences under subclause (2) are:
- (a) flow reference site 1 (Liddell)—100 ML/day from 1 May to 30 September and 150 ML/day between 1 October to 30 April,
 - (b) flow reference site 2 (Singleton)—120 ML/day from 1 May to 30 September and 300 ML/day between 1 October to 30 April, and
 - (c) flow reference site 3 (Greta)—twice the flow rates specified in clause 15 (3).
- (6) Extractions by supplementary water access licences in each river reach are to be managed to ensure that the total volume of water extracted on any day under these access licences, all other access licences, domestic and stock rights and native title rights do not exceed 50% of the total inflows to the river reach.
- (7) The sharing of water between supplementary water access licences in each river reach to achieve subclause (6) shall take into account the number of share components held by each supplementary water access licence taking water from a river reach.

Part 10 Dealings with access licences

52 Access licence dealings

- (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 to prevail.

53 Rules relating to constraints within this water source

- (1) This clause relates to dealings under sections 71B, 71D and 71J of the Act and to dealings in respect of water allocation assignments within this water source under section 71T of the Act.
- (2) Any dealing that would result in the total volume resulting from the sum of X, Y and Z exceeding 81,000 shall be prohibited, where:

X = the total number of Ml/year or unit shares in the share components of domestic and stock access licences, local water utility access licences, major utility access licences and regulated river (high security) access licences nominating water supply works in Management Zone 1,

Y = the total number of Ml/year or unit shares in the share components of regulated river (general security) access licences nominating water supply works in Management Zone 1 multiplied by the conversion factor applying to conversions from a regulated river (general security) access licence to a regulated river (high security) access licence under clause 55, and

Z = the current estimated number of Ml/year for the basic landholder rights requirements in zone 1.

Note—

Assessments indicate that the conversion factor applied to conversion of a regulated river (general security) access licence share component to a regulated river (high security) access licence share component should be 1/3 rd—see Note after clause 55 (6) (a).

- (3) The Minister may increase the 81,000 limit set in subclause (2) under section 45 (1) (b) of the Act as set out in Part 14 of this Plan.
- (4) Assignment of water allocations from a major utility access licence water allocation account shall be prohibited.
- (5) Assignment of water allocations from a water allocation account of an access licence nominating water supply works in management zone 2 or management zone 3 to a water allocation account of an access licence nominating water supply works in Management Zone 1 shall be prohibited if, in the opinion of the Minister:
 - (a) this would place the supply of water allocations already in the water allocation accounts of access licences nominating water supply works in Management Zone 1 at any risk, or

- (b) it would place the future reliability of supply to access licences nominating water supply works in Management Zone 1 at a significant risk.
- (6) Assignment of water allocations from a water allocation account of an access licence nominating water supply works in Management Zone 1 or Management Zone 2 to a water allocation account of an access licence nominating water supply works in Management Zone 3 shall be prohibited if, in the opinion of the Minister:
 - (a) this would place the supply of water allocations already in the water allocation accounts of access licences nominating water supply works in Management Zone 3 at any risk, or
 - (b) it would place the future reliability of supply to access licences nominating water supply works in Management Zone 3 at a significant risk.
- (7) 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.
- (8) 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.

54 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 this water source shall not be issued following cancellation of access licences in other water sources.

55 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 major utility access licence and issue a regulated river (high security) access licence with a number of unit shares which is equivalent to the number of MI/year of the cancelled access licence.
- (4) A conversion under subclause (3) should only be permitted if the water provided by

the access licence is no longer required for electricity generation purposes.

- (5) On application of the access licence holder, the Minister may cancel a regulated river (general security) access licence or a regulated river (high security) access licence, and issue a major utility access licence 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 the environmental water, domestic and stock rights, native title rights and the reliability of supply to all other access licences in this water source, and
 - (b) the volume of water in the regulated river (general security) access licence or regulated river (high 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 or regulated river (high security) access licence water allocation account which is in excess of the share component volume of the new regulated river (major utility) access licence will not be credited to the new regulated river (major utility) access licence water allocation account.

- (6) On application of the access licence holder, the Minister may cancel a regulated river (general security) access licence, and issue a regulated river (high security) access licence, 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 the environmental water, domestic and stock rights, native title rights and the reliability of supply to all other access licences in this water source, and

Note—

Assessments indicate that a conversion factor of 1/3 should be used, which would result in 1 Megalitre of regulated river (high security) access licence share component resulting from conversion of 3 Megalitres of regulated river (general security) access licence share component.

- (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 water allocation account.

- (7) On application of the access licence holder, the Minister may cancel a regulated river (high security) access licence, and issue a regulated river (general security) access licence, subject to:
- (a) the application of a conversion factor equal to one divided by the conversion

factor established in subclause (6), and

- (b) the total volume of regulated river (general security) access licence share components not increasing above the volume of regulated river (general security) access licence share components at the time of commencement of Part 2 of Chapter 3 of the Act.

Note—

This subclause 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.

56 Rules for interstate access licence transfer

- (1) This clause relates to dealings under section 71U of the Act.
- (2) Access licence equivalents in other States may not be transferred into this water source.
- (3) Access licences in this water source may not be transferred into another State.

57 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) Water allocations from the water allocation account of an access licence in this water source may not be assigned to the water allocation account of an access licence in any other water source.
- (3) Water allocations from the water allocation account of an access licence in any other water source may not be assigned to the water allocation account of an access licence in this water source.

58 Rules for interstate assignment of water allocations

- (1) This clause relates to dealings under section 71V of the Act.
- (2) Water allocation equivalents from in other States may not be assigned to the water allocation accounts of access licences in this water source.
- (3) Water allocations from the water allocation accounts of access licences in this water source may not be assigned to water allocation equivalents in other States.

Part 11 Mandatory conditions

59 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 this water source 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 will be subject to the available water determinations,
- (d) the requirement that extraction under the access licence will 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 access licence water allocation 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) All access licences, except supplementary water access licences, shall have a mandatory condition that facilitates the provisions of clause 49 of this Plan.

(4) All domestic and stock access licences, local water utility access licences and major utility access licences shall have mandatory conditions that only allow the taking of water if it has been ordered in accordance with any procedures established by the Minister.

(5) All regulated river (general security) access licences and regulated river (high security) access licences shall have mandatory conditions that only allow the taking of water if it has been ordered in accordance with any procedures established by the Minister, except as provided by a relevant available water determination and relevant announcements.

(6) All supplementary access water licences shall have mandatory conditions that only allow the taking of water in accordance with announcements made under clause 51

and after satisfying any procedures established by the Minister.

- (7) 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.
- (8) 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.
- (9) 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.
- (10) The major utility access licence shall also have a mandatory condition that requires the development and application of a water efficiency management plan.
- (11) All regulated river (high security) (Aboriginal cultural) access licences shall have mandatory water 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.
- (12) All regulated river (high security—research) access licences shall have mandatory conditions that only allow the taking of water if:
 - (a) it is for the conduct of scientific research purposes by an organisation approved by the Minister as an accredited research body, and
 - (b) any resulting crops or produce are not to be sold for profit.

60 Mandatory conditions on water supply works approvals

- (1) All approvals for water supply works in this water source shall have mandatory conditions to give effect to the following:
 - (a) flow measurement devices shall be installed and maintained on all water supply 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 accordance with procedures established by the Minister,
 - (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, and

(d) any other conditions required to implement the provisions of this Plan.

- (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) Approvals for water supply works in this water source that will be used to take water from the Barnard Reserve account shall have mandatory conditions that prohibit the taking of such water unless it has been ordered in accordance with procedures established by the Minister.

Part 12 System operation rules

61 System operation rules

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

62 Water delivery and channel capacity constraints

Where necessary for determining extractions, 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 to land,
- (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) SWMOP targets.

Note—

Operation of the system at the commencement of this Plan has the following constraints on maximum flows:

Glenbawn Dam—7500 ML/day

Glennies Creek Dam 5000 ML/day

63 Rates of change to releases from water storages

Rules regarding rates of change to releases from water storages should be specified in accordance with procedures established by the Minister and should take into account:

- (a) relevant environmental considerations,
- (b) damage to river banks, and

(c) public safety.

64 Dam operation during floods and spills

- (1) The operation of Glenbawn Dam and Glennies Creek Dam water storages during times of flood and spilling of water is to be undertaken in a manner that maintains the safety of dam infrastructure.
- (2) Providing it is consistent with subclause (1), operation:
 - (a) should leave the storage at full supply level at the completion of the flood or spilling of water,
 - (b) during floods should ensure the general rate of increase of outflow does not exceed the rate of increase of inflow,
 - (c) should aim to lessen downstream flood damage where possible, and
 - (d) may involve temporary storage of water above the normal maximum available storage level to reduce flood effects, and management of the rate of release of this water to avoid aggravating downstream flood damage.

65 Airspace operation rules

Evacuation of the airspace volume of 120,000 megalitres in Glenbawn Dam water storage is to occur as rapidly as possible providing that the release pattern simulates the rate of natural flood recession and takes into consideration any downstream channel capacity constraints.

Part 13 Monitoring and reporting

66 Monitoring

The monitoring of the performance indicators identified in clause 13 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 and in consultation with the water management committee, where one exists.

Note—

Implementation Program

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

67 Revision of the water source boundary and Plan area

- (1) 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 this water source or remove a river or section of river from this water source 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 in this water source or on future water allocations to access licences in this water source.
- (2) The Minister may, under section 45 (1) (b) of the Act, replace the provisions of subclause 4 (1) (b) to include in this water source any or all of the portions of waterfront land which have been excised from this water source or extend the area of unconsolidated sediments included in this water source providing that there has been:
 - (a) a comprehensive assessment of potential environmental impacts,
 - (b) a comprehensive assessment of potential impacts on future water allocations to access licences in the water source and access licences that are to be included in the water source, and
 - (c) consultation with representatives of affected licence holders and relevant environmental agencies.
- (3) Following a decision in relation to subclause (2) the Minister may, under section 45 (1) (b) of the Act and by notice published in the Gazette, make consequent modifications or additions elsewhere in the Plan.
- (4) The modifications or additions under subclause (3) may include provisions in:
 - (a) Part 6 to provide for the requirements of those access licences which, at the time

of inclusion of the additional portions of water source under subclause (2),
authorise extraction of water from those additional portions of water source,

- (b) Part 7 in relation to the granting of the licences referred to in (a),
 - (c) Part 8 in relation to an increase in the long-term extraction limit or modification of available water determinations relating to extractions from the included portions of water source,
 - (d) Part 9 in relation to water allocation account management or extraction conditions that will apply to those access licences taking water from the included portions of water source,
 - (e) Part 10 in relation to dealing rules that will apply to access licences taking water from the included portions of water source, and
 - (f) Part 11 in relation to mandatory conditions that will apply to access licences taking water from the included portions of water source.
- (5) Modifications or additions to this Plan under subclause (3) should be carried out before making of any other management plan that will apply to unconsolidated aquifers that are hydrologically connected to this water source.

68 Changes to the Management of the Barnard Reserve account

The Minister, under section 45 (1) (b) of the Act and by notice published in the Gazette, may increase the volume referred to in clause 47 (2) providing that such a change:

- (a) do not conflict with any conditions or other inclusions contained in relevant access licences or licences under the [Water Act 1912](#) which are held by Macquarie Generation or its successor,
- (b) the Minister is satisfied that there will be no impact on environmental water in this water source or on future water allocations to access licences in this water source.

69 Increase in the management zone 1 limit in relation to dealings

The Minister, under section 45 (1) (b) of the Act and by notice published in the Gazette, replace the limit set in clause 53 (2) with a limit in excess of 81,000 providing that:

- (a) an assessment of the possible impacts on the environment and the allocation of water to access licences has been carried out,
- (b) consultation with access licence holders and the Minister for the Environment has been undertaken, and
- (c) the Minister is satisfied that there will be no impact on environmental water in this water source or on future water allocations to access licences in this water source.

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 this 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.

Department is the Department of Infrastructure, Planning and Natural Resources or its successor.

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 71B or 71E of the Act.

environmental contingency allowance is a volume of water held in storage from which releases are made for particular environmental purposes or in response to particular environmental circumstances.

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.

full supply level is the storage level considered to be the limit for the purposes of storage of water, except in periods of flood operation.

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

Minister is the Minister for Natural Resources. The Minister may delegate functions under section 389 of the Act.

river reach is a section of this water source as defined in Schedule 3.

reach gauge is a river flow measurement point as defined in Schedule 3.

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

reliability of supply means the frequency with which a given volume of water allocation is available to be taken under an access licence, measures of which may include the long-term average annual allocation available to licence holders, the frequency with which full allocations allowed by the Plan are available and the frequency and sequencing of periods of low and zero allocation levels.

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](#).

supply capability is defined as the rate at which water that can be supplied to a section of a water source after satisfying the environmental water provisions and the requirements for water to satisfy basic land holder rights.

transmission loss is any loss of water volume, through natural influences such as evaporation or seepage, which occurs as water travels down a river.

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 State control.

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 from 1 July to 30 June.

Schedule 2 Contribution to relevant targets in December 2002 SWMOP

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
LOW	only small degree of contribution to target

Relevant SWMOP Target	Level of Contribution	Comments
Target 1c Long term average annual extraction limits which are ecologically sustainable and which minimise downstream impacts, established in all coastal catchments.	PARTIAL	<ul style="list-style-type: none"> An extraction limit is included in this Plan. There is scope for some growth in extractions however the limit would ensure that a high percentage of flows will be protected for environment when compared to most other developed regulated rivers in the State.

<p>Target 1f Rules for adjustments to future available water determinations in the event that the extraction limits are exceeded, clearly prescribed in consultation with the relevant management committee, and acted upon.</p>	<p>FULL</p>	<ul style="list-style-type: none"> • Rules set out in Part 8.
<p>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.</p>	<p>PARTIAL</p>	<ul style="list-style-type: none"> • This Plan sets minimum flow levels and sets aside water to help manage critical environmental events. • The extraction rules for supplementary water access licences and the Plan limit should also substantially protect current wetland and estuary inflows.
<p>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.</p>	<p>FULL</p>	<ul style="list-style-type: none"> • Frequency of flows are greater than 60% across whole of flow range.
<p>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 95th percentile.</p>	<p>HIGH</p>	<ul style="list-style-type: none"> • Frequency of flows below natural 95th percentile increased.
<p>Target 5 Access rights for water access licensees clearly and legally specified in terms of share and extraction components.</p>	<p>FULL</p>	<ul style="list-style-type: none"> • Access for regulated supply licences and supplementary water access licences are specified and tradeable.
<p>Target 9a Flow thresholds for declaration of supplementary water access, which take into account environmental needs, clearly specified.</p>	<p>HIGH</p>	<ul style="list-style-type: none"> • The initial 12 hours of flows are protected and thresholds are applied to subsequent extractions. • These thresholds may not however be sufficient to cater for all environmental needs.
<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>	<p>FULL</p>	<ul style="list-style-type: none"> • This Plan’s rules provide a formula for determining a maximum annual extraction volume for supplementary access licences each year and for formula adjustment should this Plan’s limit be exceeded.

<p>Target 9c Rules for sharing between supplementary water licence holders made explicit.</p>	HIGH	<ul style="list-style-type: none"> • This Plan ensures that at least 50% of flows in a reach must pass into the next downstream reach. • It allows for access to be shared on within each reach in proportion to the number of shares held.
<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	<ul style="list-style-type: none"> • Trading of supplementary access water is permitted.
<p>Target 12 Measures in place in all water sources subject to a gazetted water sharing plan to protect domestic and stock rights from the impact of other water access and use.</p>	FULL	<ul style="list-style-type: none"> • Obligations are set out in Part 4.
<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	<ul style="list-style-type: none"> • This Plan does not address specific Aboriginal cultural or traditional requirements and has not identified any sites of particular importance. • The application of a long-term extraction limit that protects a substantial portion of river flows, and this Plan’s environmental flow and supplementary water access rules should provide some protection.
<p>Target 16a All share components of access licences tradeable.</p>	FULL	<ul style="list-style-type: none"> • All entitlements (including supplementary water) will be tradeable under this Plan.
<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>	PARTIAL	<ul style="list-style-type: none"> • Plan provides for introduction of trading between the Hunter regulated river and other water sources in the Hunter water management area if assessments indicate this can be done with minimal environmental or water supply impacts.
<p>Target 16d Reduced conversion factors only applied when necessary to offset increased losses associated with water supply delivery.</p>	FULL	<ul style="list-style-type: none"> • This Plan does not impose reduction factors.

Target 16f Zones established where necessary for environmental protection and limits/constraints on water dealings in them made explicit. PARTIAL

- Limit on movement of share components into the river system above the Glennies Creek junction has been applied to protect supply reliability.
- Movements of water allocations into upstream reaches subject to assessments of impacts on other access licences.

Target 35 All management plans incorporating water quality objectives that have considered Government approved Interim Environmental Objectives, the current Australian and New Zealand Environment and Conservation Council Guidelines and the recommendations of relevant Healthy Rivers Commission Inquiries. PARTIAL

- Plan includes a water quality objective in relation to releases.
- Some water sharing provisions, particularly the planned environmental water provisions would be expected to produce benefits in line with the Interim Environmental Objectives.

Schedule 3 Management zones and flow reference sites

1. Management zones

Management zones referred to in this Plan are:

Management zone	Description
1	all of the Hunter Regulated River Water Source upstream of the junction of the Hunter River and Glennies Creek
2	all of the Hunter Regulated River Water Source downstream of the junction of the Hunter River and Glennies Creek
3	all of the Hunter Regulated River Water Source within the catchment of Glennies Creek

2. Flow reference sites

Flow reference sites referred to in this Plan are:

Flow reference site	Description
1	Liddell flow monitoring gauge 210083
2	Singleton flow monitoring gauge 210001
3	Greta flow monitoring gauge 210064

3. River reaches and reach gauges

River reaches and reach gauges for the purposes of management of extractions by

supplementary water access licences are:

River reach	River reach definition	Reach gauge name and number
1A	Hunter River from the upper reaches of Glenbawn Dam to the Goulburn River junction	Muswellbrook 210002
1B	Hunter River from the Goulburn River junction to the Glennies Creek junction	Liddell 210083
2A	Hunter River from the Glennies Creek junction to the Wollombi Brook junction	Liddell 210083 plus Middle Falbrook 210044
2B	Hunter River from the Wollombi Brook junction to the downstream end of the Hunter Regulated River Water Source	Singleton 210001
3A	Glennies Creek from the upper reaches of Glennies Creek Dam to the Hunter River junction	Middle Falbrook 210044

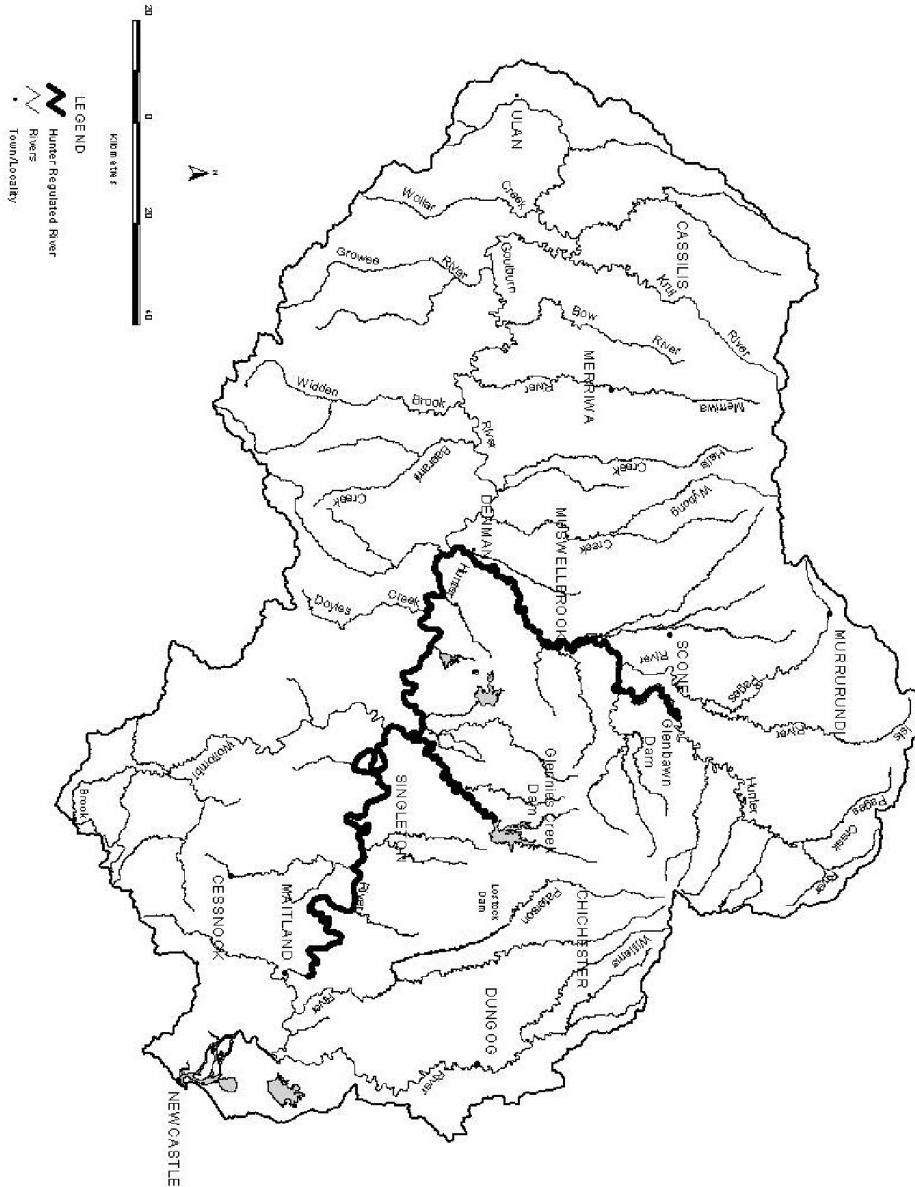
Appendix 1 Rivers in the Hunter Regulated River Water Source

At the commencement of this Plan the Hunter Regulated River Water Source includes the following:

- (i) Dart Brook from its junction with the Hunter River to a point adjacent to the north-eastern corner of Lot 3, Section 3, DP 758554 , Parish of Ellis, County of Brisbane;
- (ii) Glendon Brook from its junction with the Hunter River to a point adjacent to the western boundary of Lot 1, DP 954580, Parish of Marwood, County of Durham;
- (iii) Glennies Creek from the upper limit of the Glennies Creek Dam water storage, including all tributaries to the storage (named and unnamed) up to high water mark of the storage, downstream to the confluence of Glennies Creek with the Hunter River;
- (iv) Hunter River from the upper limit of Glenbawn Dam water storage, including all tributaries to the storage (named and unnamed) up to high water mark of the storage, downstream to a point adjacent to the eastern boundary of Lot 2, DP 1012258, Parish of Maitland, County of Northumberland on the southern bank of the River and adjacent to a point 150m downstream of the western boundary of Lot 1, DP 856702, Parish of Middelhope, County of Durham on the northern bank of the River, 1400m upstream of Oakhampton rail bridge;
- (v) Mudies Creek from its junction with the Hunter River to a concrete culvert located at a point 150 m upstream from the eastern boundary of Lot 1, DP 962858, Parish of Whittingham, County of Northumberland;
- (vi) Stanhope Creek from its junction with the Hunter River to a point 382 m upstream from the southern boundary of Lot 101, DP 809436, Parish of Stanhope, County of Durham;
- (vii) Station Creek from its junction with Glennies Creek (adjacent to the western boundary of Lot G, DP 37613, Parish of Auckland, County of Durham) to the rock bar 60 m upstream; and

- (viii) Sandy Creek (Stream Code 265000) from its junction with the Hunter River at Muswellbrook to a point 1400m upstream, adjacent to the southern boundary of Lot 229, DP 838624, Parish of Rowan, County of Durham.

Appendix 2 Hunter Water Management Area



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 Sustainable 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 indicators for the Hunter Regulated River Water Sharing Plan

Performance indicator	Related objective	As measured by:	Commentary
------------------------------	--------------------------	------------------------	-------------------

- | | | | |
|--|--|--|---|
| (a) Change in ecological condition of the water source and dependent ecosystems. | clause 11 (a) to clause 11 (i) | <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 11 (a) | <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, such as 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. | clause 11 (c) to clause 11 (f) and clause 11 (j) | <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. |

(d) Change in water quality.	clause 11 (k)	<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 11 (l)	<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 11 (m) clause 11 (n)	<ul style="list-style-type: none"> Percentage of years that reserves were adequate to satisfy urban water requirements and major utility requirements. 	
(g) Change in economic benefits derived from water extraction and use.	clause 11 (o) to clause 11 (s)	<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"> 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 the plan provisions.

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| (h) Extent of recognition of spiritual, social and customary values of water to Aboriginal people. | clause 11 (t) | <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 5 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 11 (t) | <ul style="list-style-type: none">• Native title rights allowances made according to plan provisions/implementation program requirements. | |