



Calliope River Basin

resource operations plan

May 2008

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Foreword

The Calliope River Basin Resource Operations Plan has been finalised following a period of consultation and review that began with the release of a draft plan in May 2007. Submissions were invited on the draft plan and all views expressed through these submissions were considered when preparing the final plan.

The finalised plan will implement the objectives and outcomes specified in the *Water Resource (Calliope River Basin) Plan 2006*. Together, these plans will provide enhanced certainty and security for water users and the natural environment. Both plans are complementary parts of a water planning process that will ensure that the surface water resources in the Calliope River Basin are sustainably managed for the benefit of future generations.

The resource operations plan contains arrangements for:

- amending licences defined by area or pump size to ensure they share consistent specifications, including an annual volumetric limit and a rate of take;
- metering entitlements in line with statewide criteria to ensure water use is measured and that conditions including annual volumetric limits are observed;
- setting conditions on licences;
- dealing with unallocated water;
- water and ecosystem monitoring; and
- amending the plan.

The plan provides for making 5000 megalitres of unallocated water per annum (ML/a) available for all purposes and 500 ML/a available for town water supplies. Any future development will be managed within sustainable levels.

I would like to take this opportunity to thank all those who have contributed to the development of this plan for their input.

Debbie Best

Deputy Director-General
Department of Natural Resources and Water

This document contains the following:

- (1) Calliope River Basin Resource Operations Plan 2008**
- (2) Explanatory notes for the resource operations plan**

Calliope River Basin
resource operations plan 2008

Table of contents

Chapter 1—Preliminary	1
Chapter 2—Process for dealing with unallocated water	4
Part 1—Availability of unallocated water	4
Division 1—General reserve.....	4
Division 2—Strategic reserve	4
Part 2—Unallocated water applications.....	5
Division 1—Application process.....	5
Division 2—Assessing applications.....	6
Part 3—Establishing terms and conditions on water licences.....	6
Part 4—Deciding an application for a water licence	8
Chapter 3—Replacing an existing authority and amending water licences.....	10
Part 1—Granting a water licence to replace an existing authority.....	10
Part 2—Amending existing water licences.....	10
Chapter 4—Dealing with water licences	13
Chapter 5—Monitoring, assessment and reporting.....	15
Chapter 6—Amendments to the resource operations plan	16
Part 1—Amendments not requiring public notification.....	16
Part 2—Amendments requiring public notification	16
Glossary	17
Schedule A—Calliope River Basin plan area.....	18
Schedule B—Links between this plan and the <i>Water Resource (Calliope River Basin) Plan 2006</i>.....	19
Schedule C—Passing flows and rate factors	20
Schedule D—Pump sizes and maximum rates	21
Schedule E—Amended licences.....	22
Explanatory notes for the Calliope River Basin Resource Operations Plan.....	24

Chapter 1—Preliminary

1. Water resource plan implemented through the resource operations plan

This resource operations plan implements the *Water Resource (Calliope River Basin) Plan 2006* (the water resource plan).

2. Name of the resource operations plan

This resource operations plan may be cited as the *Calliope River Basin Resource Operations Plan 2008* (this plan).

3. Commencement of the resource operations plan

This plan commences on the first business day after this plan is notified in the *Queensland Government Gazette*.

4. Plan area

This plan applies to the area shown as the plan area on the map in schedule A.

5. Water to which this plan applies

This plan applies to the following water in the plan area:

- (a) water in a watercourse, lake or spring; and
- (b) overland flow water.

6. Information about areas

- (1) The exact boundary of the plan area is held in digital electronic form by the department.
- (2) The information held in digital electronic form can be reduced or enlarged to show the details of the boundaries¹.

7. Departmental water monitoring data collection standards

- (1) Where this plan requires monitoring by a person, including measurement, collection, analysis and storage of data, the person must ensure the monitoring is consistent with the *Water monitoring data collection standards*².
- (2) The *Water monitoring data collection standards* may be reviewed and updated by the chief executive at any time.

8. Metering

- (1) A measuring device must be used to measure the volume of water taken under a water licence to take water from a watercourse, lake or spring in the plan area.
- (2) Subsection 1 applies:

¹ The boundaries in digital electronic form may be inspected at the department's head office at 41 George Street, Brisbane and its regional office at 209 Bolsover Street, Rockhampton.

² The *Water monitoring data collection standards* can be accessed at:
<www.nrw.qld.gov.au/water/monitoring/pdf/wm_data_col_stds.pdf>

- (a) from the day a water entitlement is declared to be a metered entitlement under the Water Regulation 2002, Part 7; and
- (b) in the circumstances mentioned in the Water Regulation 2002.

9. Sustainable management of water

This plan, in implementing the water resource plan, provides for the sustainable management of water by:

- (a) protecting the biological diversity and health of natural ecosystems and contributing to the protection and, where possible, the reversal of degradation of water, watercourses, lakes, springs, natural ecosystems and other resources by:
 - (i) developing conditions for existing water licences with regard for environmental needs;
 - (ii) considering environmental requirements when dealing with unallocated water; and
 - (iii) detailing arrangements for the collection and assessment of data by the chief executive relating to the water resource plan outcomes (including ecological outcomes)
- (b) contributing to improving the confidence of water users regarding the availability and security of water entitlements by:
 - (i) detailing processes for dealing with unallocated water;
 - (ii) detailing arrangements for the collection and assessment of data by the chief executive relating to the water resource plan outcomes; and
 - (iii) detailing those parts of the plan that may be amended under sections 105(5) and 106(b) of the *Water Act 2000* (stated amendments of the resource operations plan)
- (c) contributing to increasing community understanding and participation in the sustainable management of water by:
 - (i) providing opportunities for community participation and submissions as part of plan development; and
 - (ii) specifying rules and arrangements for the allocation and management of water in the plan area, including explanatory notes that provide details of the intent and application of each section of this plan.

10. Addressing water resource plan outcomes

- (1) This plan addresses the water resource plan outcomes by:
 - (a) specifying processes, rules and limits, the application of which are consistent with objectives specified in the water resource plan; and
 - (b) providing monitoring and reporting arrangements that will assist in the ongoing assessment of whether water management arrangements in the plan area will contribute to the achievement of the water resource plan outcomes.
- (2) Schedule B lists the outcomes of the water resource plan and how the rules of this plan are linked to those outcomes.

11. Glossary

The glossary for this plan provides further information on particular words used in this plan.

Chapter 2—Process for dealing with unallocated water

12. Scope of Chapter 2

This chapter states the process for making available and dealing with unallocated water mentioned in section 19 of the water resource plan.

13. Record of volume of unallocated water

- (1) The chief executive must keep a record of the volume of unallocated water available.
- (2) This record must be updated after the completion of a release process.

14. Land and water management plan

Use of water under a water licence granted in this chapter requires a land and water management plan³ if the water is to be used for irrigation.

Part 1—Availability of unallocated water

15. Scope of Part 1

This part states the availability of unallocated water identified as one of the following types of reserves:

- (a) general reserve; or
- (b) strategic reserve.

Division 1—General reserve

16. Availability of general reserve

- (1) Unallocated water held as general reserve may be made available for all purposes.
- (2) The volume of the reserve available at the time of this plan's commencement is shown in Table 1.

Division 2—Strategic reserve

17. Availability of strategic reserve

- (1) Unallocated water held as strategic reserve may be made available for town water supplies.
- (2) The volume of the reserve available at the time of this plan's commencement is shown in Table 1.

Table 1: Unallocated water reserves

Reserve	Annual volumetric limit (ML)
General	5000
Strategic	500
Total	5500

18 to 26 section numbers are not used

³ Section 73 (1)(c) of the *Water Act 2000*

Part 2—Unallocated water applications

27. Scope of Part 2

This part states the application process for the unallocated water reserves and how applications will be assessed.

28. Application process for unallocated water

- (1) The chief executive may make some or all unallocated water available.
- (2) Applications for the general and strategic reserves of unallocated water must be in accordance with the process in Division 1.

Division 1—Application process

29. Scope of Division 1

This division provides a process for making applications for the grant of a water licence.

30. Application for a water licence from the general reserve

- (1) The chief executive may publish a public notice inviting interested parties to apply for unallocated water from the general reserve.
- (2) The public notice must state, but is not limited to:
 - (a) the location where water is being made available;
 - (b) the annual volumetric limit of water that is being made available for granting;
 - (c) the process for making an application, including any price for the water that is being made available;
 - (d) a date by when an application must be received; and
 - (e) any application fee that may apply.
- (3) An application for a water licence in response to an invitation under subsection (1) must:
 - (a) be made on the approved form;
 - (b) state a proposed purpose, location and annual volumetric limit;
 - (c) be accompanied by any application fee; and
 - (d) provide any other information required under the notice.
- (4) At any time the chief executive may cease the application process for unallocated water from the general reserve and advise applicants.

31. Application for a water licence from the strategic reserve

- (1) An application for unallocated water from the strategic reserve may be made by a local government within the plan area to the chief executive at any time.
- (2) The application must:
 - (a) be made on the approved form;
 - (b) state a proposed purpose, location and annual volumetric limit;

- (c) be accompanied by any application fee; and
- (d) provide any other information required by the chief executive.

Division 2—Assessing applications

32. Scope of Division 2

This division provides a process for assessing applications made under Division 1 for a water licence.

33. Assessing an application for a water licence

- (1) In assessing an application for a water licence, the chief executive must consider the following:
 - (a) the application and any additional information obtained;
 - (b) the availability of unallocated water in the plan area;
 - (c) the consistency of the application with section 21 of the water resource plan and this plan;
- (2) Despite subsection (1), an application to take water from the dam known as Lake Callemondah on Auckland Creek must only be from the strategic reserve.
- (3) In addition to those matters specified in subsection (1), when assessing an application for a water licence to take overland flow water, the chief executive may only approve an application if the granting of the proposed licence were to result in the total volume of overland flow water capable of being stored within a catchment at any one time being less than 25 per cent of the median annual flow determined by the chief executive for:
 - (a) the local catchment from which the take of overland flow water is proposed; or
 - (b) any subsequent catchment downstream of the proposed location of take.
- (4) At any time during the assessment, the chief executive may require additional information from the applicant in relation to the assessment within a stipulated time frame.
- (5) If the applicant fails, without a reasonable justification, to provide information requested within a stipulated time then the application lapses.
- (6) If the application fails to meet the criteria listed in subsections (1), (2) or (3) the chief executive must refuse the application and give the applicant a notice stating the decision.

34 to 40 section numbers are not used

Part 3—Establishing terms and conditions on water licences

41. Scope of Part 3

This part details terms and conditions that the chief executive may include on licences to take unsupplemented water, which may be granted under this chapter.

42. Water licences for taking water from a watercourse, lake or spring

A water licence to take water from a watercourse, lake or spring must state the following:

- (a) the purpose for which water may be taken under the licence, which must be one of the following:
 - (i) agriculture; or
 - (ii) town water supply; or
 - (iii) any.
- (b) the maximum instantaneous rate of take;
- (c) the daily volumetric limit;
- (d) the annual volumetric limit; and
- (e) conditions for the licence, including flow conditions.

43. Determining terms and conditions for a water licence to take water from a watercourse, lake or spring

- (1) When determining the terms and conditions that may be specified on a water licence for the take of water from a watercourse, lake or spring, the chief executive must consider:
 - (a) the information supplied by the applicant; and
 - (b) the matters specified in section 21 of the water resource plan.
- (2) The maximum instantaneous rate of take in litres per second for a licence must be determined by multiplying the annual volumetric limit in megalitres by a rate factor no greater than that for the catchment area of the proposed location listed in column 3 of Table 3 in schedule C.
- (3) The daily volumetric limit (in megalitres) for a licence must be determined by multiplying the annual volumetric limit in megalitres by a daily volumetric rate factor no greater than that for the catchment area of the proposed location listed in column 4 of Table 3 in schedule C.
- (4) Flow conditions for the licence must:
 - (a) include a passing flow no less than that shown in column 2 of Table 3 in schedule C for the catchment area to the proposed location;
 - (b) limit the extent to which an authorised in-stream storage may be drawn down below its full supply level.
- (5) Despite subsection 4(a), in determining the flow conditions for a licence to take water from the dam known as Lake Callemondah on Auckland Creek, the chief executive may specify a different flow condition after considering matters in subsection 1.
- (6) Despite subsections (2), (3) and (4), the chief executive may specify a higher maximum instantaneous rate and daily volumetric limit if:
 - (a) the applicant provides a submission that deals, to the satisfaction of the chief executive, with the matters listed in section 21 of the water resource plan; and
 - (b) the passing flow for the licence is greater than the passing flow determined under subsection (4)(a).
- (7) Subsections (1) and (6) do not limit the matters the chief executive may consider.

44. Water licences for taking overland flow water

- (1) The purpose for a water licence to take overland flow water must be either:
 - (a) agriculture; or
 - (b) town water supply; or
 - (c) any.
- (2) A water licence to take overland flow water may state the following terms and conditions:
 - (a) the maximum stored volume;
 - (b) the maximum instantaneous rate of take;
 - (c) the daily volumetric limit;
 - (d) the annual volumetric limit;
 - (e) for the taking of overland flow water with unrestricted rate of take, a flow condition to bypass water downstream of the point of take at times when overland flow water could be taken; and
 - (f) for the taking of overland flow water with a restricted rate of take, a flow condition that water may only be taken when the flow exceeds a designated flow or water trigger level.

45. Determining terms and conditions for a water licence to take overland flow water

- (1) When determining the terms and conditions that may be specified on a water licence for the take of overland flow water, the chief executive must consider:
 - (a) the information supplied by the applicant;
 - (b) the matters specified in section 21 of the water resource plan; and
 - (c) the capacity of any proposed works to take and store water.
- (2) Subsection (1) does not limit the matters the chief executive may consider.

Part 4—Deciding an application for a water licence

46. Advice to an applicant of proposed water licence

- (1) The chief executive must advise the applicant of a proposed water licence including:
 - (a) any proposed terms and conditions decided under Part 3;
 - (b) the date by which written acceptance of the proposed licence must be received;
 - (c) monies payable for granting of the proposed water licence; and
 - (d) the date by which monies payable must be received.
- (2) Where written acceptance of the proposed licence has not been provided in accordance with (1)(b) and monies payable have not been received in accordance with 1(c) and 1(d), the application lapses.

47. Decision to grant a water licence

Where written acceptance and payment of the proposed water licence has been received in accordance with sections 46(1)(b), (c) and (d), the licence must be granted and section 212 of the *Water Act 2000* applies.

48 to 69 section numbers are not used

Chapter 3—Replacing an existing authority and amending water licences

Part 1—Granting a water licence to replace an existing authority

70. Granting a water licence to replace an existing authority

- (1) The chief executive may at any time, under section 212 of the Water Act, grant a water licence for the take of overland flow water to replace an authority under section 15 of the water resource plan.
- (2) Before granting a water licence under section 212 of the Water Act, the chief executive must issue a notice to the owner of the land asking the landowner to provide:
 - (a) information on the relevant existing works that take overland flow water;
 - (b) information about the pattern of use from the works, based on the historical water requirements and use being made of the water;
 - (c) a certified report about the works as specified in section 71; and
 - (d) any other information required by the chief executive.

71. Certified reports for overland flow works

- (1) For the purpose of this part, a certified report is a report prepared in accordance with the standards and requirements set out in a notice provided by the chief executive.
- (2) The purpose of the certified report is to provide the chief executive with an accurate representation of:
 - (a) the infrastructure to which the report relates;
 - (b) how the infrastructure is operated; and
 - (c) the ability of the infrastructure to take overland flow water.
- (3) The chief executive may require that the certified report is to be verified and signed by a registered professional engineer of Queensland.

Part 2—Amending existing water licences

72. Amending water licences

- (1) This part applies to any water licence to take water in the plan area which does not state:
 - (a) an annual volumetric limit; or
 - (b) a maximum rate of take.
- (2) The chief executive must amend the licence in accordance with this part to specify:
 - (a) an annual volumetric limit
 - (b) a maximum rate of take
 - (c) a purpose.

73. Annual volumetric limit

- (1) The annual volumetric limit for taking water under a water licence, determined by the chief executive, is as stated in schedule E for the relevant licence.
- (2) For subsection 1, the annual volumetric limit for taking water is the limit decided by the chief executive having regard to the following:
 - (a) for a licence that states a volume, the volume stated
 - (b) for a licence that states an area, the volume determined by multiplying the authorised area in hectares by 6 ML
 - (c) if a licence provides an entitlement to take an annual volume of water but also specifies an area that may be irrigated, the licence is to be amended by removing the reference to an area that may be irrigated
 - (d) for a licence attached to land that is not riparian to a watercourse, lake or spring:
 - (i) if the entitlement is to take water for stock or domestic purposes, then the chief executive must amend the licence to specify an annual volumetric limit that may be taken for those purposes, where the annual volumetric limit is to be 1 ML for domestic purposes and a further allowance for stock, having regard for the stocking rate.
 - (ii) if a licence provides an entitlement to take water for irrigation as well as stock or domestic use, then the annual volumetric limit of water for irrigation (provided in subsection 2(b)) is to be added to the annual volume of water for stock and domestic use (provided in subsection 2(d)(i)), to establish a total annual volumetric limit that can be taken for any or all of the authorised purposes.
 - (e) for another authorisation, an annual volumetric limit determined by the chief executive having regard to:
 - (i) the purpose of a licence; and
 - (ii) the original application and investigation of a licence.

74. Maximum rate of take

- (1) The maximum rate of take for taking water under a water licence, determined by the chief executive, is as stated in schedule E for the relevant water licence.
- (2) For subsection 1, the maximum rate for taking water is the rate decided by the chief executive having regard to the following:
 - (a) for an authorisation that states a rate for taking water, the stated rate;
 - (b) for an authorisation that does not state a maximum rate, but for which a related development permit states a pump size, a rate decided by the chief executive having regard to:
 - (i) for centrifugal pumps—schedule D, Table 4, column 2, for the pump size
 - (ii) for helical rotor pumps—schedule D, Table 5, column 2, for the pump size
 - (iii) for piston pumps—schedule D, Table 6, column 2, for the pump size
 - (c) for another authorisation, a rate determined by the chief executive having regard to the original licence application and investigation.

75. Purpose on a water licence

- (1) The purpose for taking water stated on a water licence, determined by the chief executive, is as stated in schedule E for the relevant water licence.
- (2) For subsection 1, the purpose decided by the chief executive must be one of the following:
 - (a) agriculture; or
 - (b) town water supply; or
 - (c) any.

76 to 85 section numbers are not used

Chapter 4—Dealing with water licences

86. Scope of Chapter 4

This chapter deals with existing and new applications for water licences.

87. Water licence applications to which this chapter applies

- (1) This chapter deals with applications for water licences for water from a watercourse, lake or spring and overland flow water.
- (2) This chapter applies to each application for a water licence made under section 206 of the *Water Act 2000*, if granting the application would have one or more of the following effects within the plan area:
 - (a) increase the amount of water that may be taken;
 - (b) change the location from which water may be taken;
 - (c) increase the rate at which water may be taken;
 - (d) change the flow conditions under which water can be interfered with or taken; or
 - (e) increase the interference with water.
- (3) This chapter applies even if the application was made before the commencement of this plan.
- (4) This chapter does not apply to applications made under section 221 and 229 of the *Water Act 2000*.

88. Applications to be refused

The chief executive must refuse an application to which this chapter applies unless the water resource plan or this plan provides for dealing with the application.

89. Applications not accepted

Applications for water licences must not be accepted unless the water resource plan or this plan provides for accepting and dealing with the application.

90. Application to amend the maximum instantaneous rate of take

- (1) This section applies where a water licence holder wishes to amend the stated maximum instantaneous rate of take on their licence.
- (2) An application may be made to the chief executive for a review of the maximum instantaneous rate specified on the water licence.
- (3) The chief executive may amend the licence to state a different rate after considering the matters in section 21 of the water resource plan.
- (4) When determining a new maximum instantaneous rate, the chief executive must have regard to those matters specified in section 74 of this plan.
- (5) If the application is for a maximum instantaneous rate of take higher than the existing maximum instantaneous rate of take stated on the licence, and the licence does not have a daily volumetric limit, then the chief executive must include a daily volumetric limit.

91. Applications to interfere with water by impounding flow

- (1) This section applies to an application to interfere with water in a watercourse.
- (2) If the proposed interference by impounding water is to be located in the Calliope River, the application must be refused.
- (3) If the proposed interference by impounding water is to be located on tributaries of the Calliope River, or coastal streams not connected to the Calliope River, a maximum height of 1 metre and a maximum capacity of 2 ML must apply.

92 to 105 section numbers are not used

Chapter 5—Monitoring, assessment and reporting

106. Water monitoring

- (1) The chief executive must measure, and keep publicly available, records of:
 - (a) water quantity and flows
 - (b) water use.
- (2) The chief executive must collect and record publicly available information on:
 - (a) future consumptive demands for water
 - (b) water use efficiency.
- (3) The chief executive may use information collected from meters and other flow measurement devices to support water resource assessment and reporting.

107. Ecological performance monitoring and assessment

- (1) The ecological performance monitoring and assessment program will provide the basis for the chief executive to collect and record information on:
 - (a) ecological assets that are linked to the ecological outcomes of the water resource plan
 - (b) the critical water requirements of ecological assets, including the provision of these requirements under the plan.
- (2) The chief executive may work with stakeholders in developing and implementing this program as part of the implementation of this plan.

108. Assessment

- (1) The chief executive must make ongoing assessments of whether the trends in data measured, collected and recorded under the above sections of this plan indicate that outcomes specified in the water resource plan will be achieved.
- (2) The chief executive's assessments may be used in assisting the minister to prepare a report under section 24 of the water resource plan.

109. Links to other monitoring programs

Information collected as part of other monitoring and assessment programs in the catchment may be used to help with the assessment of the ecological outcomes detailed in the water resource plan.

110 to 115 sections numbers not used.

Chapter 6—Amendments to the resource operations plan

Part 1—Amendments not requiring public notification

116. Scope of Part 1

This part describes those amendments that may be made to this plan under section 106(b) of the Water Act.

117. Implementing an amendment to the water resource plan

An amendment may be made to this plan to implement an amendment made to the water resource plan under section 57 of the Water Act.

118. Changes to monitoring requirements

- (1) An amendment that provides for improved or more efficient monitoring for assessing the outcomes of the water resource plan may be made to this plan.
- (2) Such amendments may include but are not limited to the following:
 - (a) changing indicators for water quality or biological monitoring
 - (b) an increase or addition to monitoring requirements if further information is required
 - (c) a reduction or removal of State monitoring requirements if the chief executive is satisfied that no further information or benefit is gained from the continuation of the monitoring.

Part 2—Amendments requiring public notification

119. Amendments under the *Water Act 2000*

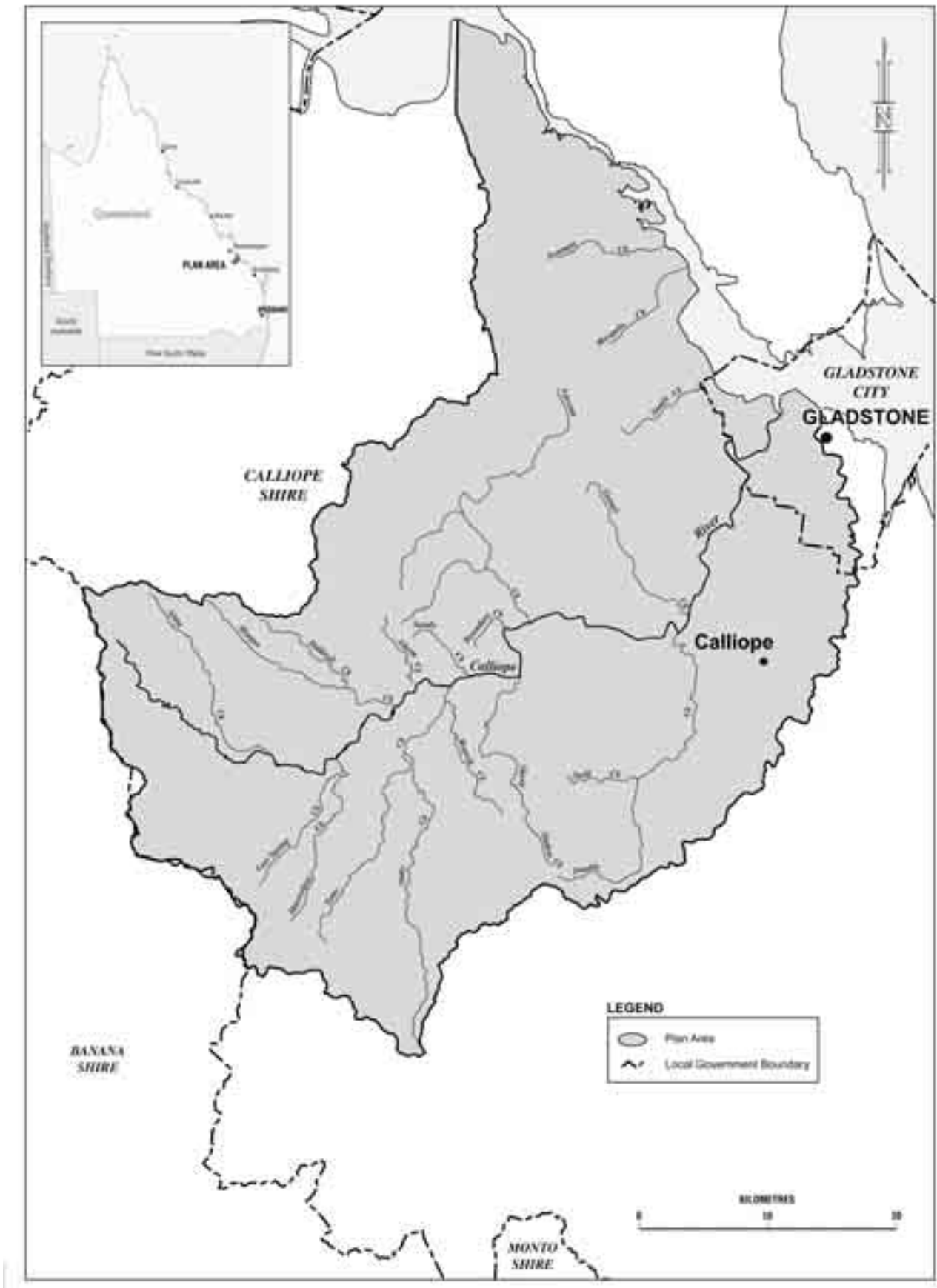
- (1) The chief executive may amend this plan under subsection 105(5) of the *Water Act 2000* to include additional requirements for water management.

120 to 125 sections numbers not used.

Glossary

Term	Definition
Water Act	The <i>Water Act 2000</i>
An authority under section 15 of the water resource plan	An authority under section 15 of the <i>Water Resource (Calliope River Basin) Plan 2006</i> for the owner of land to continue taking overland flow water using existing works
Annual volumetric limit	For a water licence, means the maximum volume of water that may be taken under the licence in a water year
Chief executive	The chief executive officer of the department responsible for administering the <i>Water Act 2000</i>
Daily volumetric limit	for a water entitlement, means the maximum volume of water that may be taken under the entitlement in a day
Department	Department of Natural Resources and Water
Ecological asset	An ecological asset can be a species, group of species, a biological function or particular ecosystem or place of value for which water is critical
Gauging station	The complete installation at a measuring site on a watercourse where water level and discharge records are regularly obtained
Median annual flow	The annual flow volume that is equalled or exceeded in 50% of years
Megalitre (ML)	One million litres
Passing flow	The flow in a watercourse as defined by either litres per second, cubic metres per second or megalitres per day, past a specified location
The catchment	The Calliope River Basin
Water resource plan ('the water resource plan')	The <i>Water Resource (Calliope River Basin) Plan 2006</i>
Water use	Actual consumption of water
Water year	The period from 1 July in one year to 30 June in the following year

Schedule A—Calliope River Basin plan area



Schedule B—Links between this plan and the *Water Resource (Calliope River Basin) Plan 2006*

Table 2: Relationship of Calliope River Basin Resource Operations Plan to *Water Resource (Calliope River Basin) Plan 2006* outcomes

General outcomes of the <i>Water Resource (Calliope River Basin) Plan 2006</i> (sections 8 and 9)	Rules and provisions of the resource operations plan
<i>Each of the following is a general outcome for water in the plan area:</i>	
8(a) to provide for the use of all water entitlements and other authorisations in the plan area	<ul style="list-style-type: none"> • dealing with unallocated water • replacing an existing authority and amending water licences
8(b) to provide for the continued use of all existing works	<ul style="list-style-type: none"> • replacing an existing authority and amending water licences • dealing with water licences
8(c) to make water available to sustain current levels of, and to provide for appropriate growth in, economic activity in the plan area	<ul style="list-style-type: none"> • dealing with unallocated water
8(d) to support the water-related social and cultural values of communities in the plan area	<ul style="list-style-type: none"> • process for dealing with unallocated water
8(e) to encourage continual improvement in the efficient use of water	<ul style="list-style-type: none"> • metering • dealing with unallocated water
<i>Each of the following is an ecological outcome for water in the plan area:</i>	
9(1)(a) to support natural ecosystems by minimising changes to natural flow regimes	<ul style="list-style-type: none"> • monitoring, assessment and reporting • amending existing licences to include a maximum rate of take and an annual volumetric limit • including a maximum instantaneous rate of take, flow conditions, and a daily volumetric limit on new water licences.
9(1)(b) to maintain adequate water flows to protect the health of riparian vegetation and aquatic ecosystems in the plan area	<ul style="list-style-type: none"> • monitoring, assessment and reporting • amending existing licences to include a maximum rate of take and an annual volumetric limit • including a maximum instantaneous rate of take, flow conditions, and a daily volumetric limit on new water licences.
9(1)(c) to maintain adequate freshwater outflows to The Narrows and the natural wetlands in the plan area	<ul style="list-style-type: none"> • monitoring, assessment and reporting • amending existing licences to include a maximum rate of take and an annual volumetric limit • including a maximum instantaneous rate of take, flow conditions, and a daily volumetric limit on new water licences.

Schedule C—Passing flows and rate factors

Table 3: Passing flows and rate factors

Column 1	Column 2	Column 3	Column 4
Catchment area (km²)	Passing flow (ML/day)	Instantaneous rate factor	Daily volumetric limit rate factor
0–10	5	1.75418	0.1262
11–20	10	1.50398	0.1082
21–50	15	1.33579	0.0961
51–100	25	1.19957	0.0863
101–150	35	1.11756	0.0804
151–500	70	0.95771	0.0689
501–750	100	0.89238	0.0642
751–1000	130	0.85068	0.0612
1001–1500	165	0.80898	0.0582
1501–2000	210	0.77284	0.0556

Schedule D—Pump sizes and maximum rates

Table 4: Centrifugal pump

Column 1	Column 2
Pump size (mm)	Rate (L/s)
32	7
40	12
50	17
65	30
80	45
100	65
125	90
150	115
200	185
250	250
300	300
350	350
400	430
500	650

Table 5: Helical rotor pump

Column 1	Column 2
Pump size (mm)	Rate (L/s)
40	3
50	5.5
80	9.5

Table 6: Piston pump

Column 1		Column 2
Pump size (mm)		Rate (L/s)
Bore	Stroke	
100	125	2.5

Schedule E—Amended licences

Table 7: Amended licences

Licensee	Licence number	Maximum rate of take (L/s)	Annual volumetric limit (ML)	Purpose	Watercourse
AC & A Newton	57522U	27	200	Agriculture	Calliope River
AJ & LER Peel	40239U	2	49	Agriculture	Calliope River
BJ & EJ Moloney	57567U	30	450	Agriculture	Calliope River
BJ & EJ Moloney	57568U	300	350 ^a	Agriculture	Calliope River
BJ Pickels	57405U	8	48	Agriculture	Double Creek
BK & VM Smith	29007U	7	24	Agriculture	Leixlip Creek
C & RM Mohorovic	36855U	12	12	Agriculture	Double Creek
DA & GW Bruce	51404U	65	120	Agriculture	Calliope River
DC French	19281U	12	12	Agriculture	Double Creek
DI Raguse	51549U	7	6	Agriculture	Double Creek
DJ & JM Weinert	33383U	2.5	12	Agriculture	Double Creek
DL & EJ Roots	35201U	12	6	Agriculture	Clyde Creek
DM & PA Bradford	104726	45	1	Any	Calliope River
DM & PA Bradford	177098	12	1	Any	Clyde Creek
DP Orridge	51570U	5.5	8	Agriculture	Calliope River
DR & JA Dingle	51668U	17	72	Agriculture	Calliope River
DR & JA Dingle	57531U	3	42	Agriculture	Harper Creek
ER & VJB Macleod	31696U	17	24	Agriculture	Double Creek
FS & TL Dingle	31694U	12	18	Agriculture	Double Creek
Gehgre Aboriginal and Torres Strait Islanders Corporation	31296U	12	24	Agriculture	Leixlip Creek
GJ Downing	34520U	17	36	Agriculture	Double Creek
GT & LM Maycock	31693U	12	18	Agriculture	Double Creek
GW & RJ Bruce	46147U	45	60	Agriculture	Gravel Creek
GW & RJ Bruce	46148U	45	60	Agriculture	Gravel Creek
GW Bruce	46149U	65	120	Agriculture	Calliope River
GW Bruce	46150U	65	60	Agriculture	Calliope River
HA & IR Brown	51686U	30	30	Agriculture	Double Creek
JA Gibbons, CF & JM Robinson	48378U	2	50 ^b	Agriculture	Clyde Creek
JM & KW Boston	38135U	5.5	2	Any	Calliope River
JPL & JSM Mullemeister	51505U	65	180	Agriculture	Calliope River
KI & RF Wilmot	51674U	17	48	Agriculture	Double Creek
Kiora Pastoral Company Pty Ltd; ARL Wilson	57447U	12	6	Agriculture	Oaky Creek
Kiora Pastoral Company Pty Ltd; ARL Wilson	57528U	65	100	Agriculture	Oaky Creek
KM Ferguson	51646U	3	26	Agriculture	Calliope River
LJ & RM Baker	177099	12	1	Any	Clyde Creek
LJ Coward	37290U	65	120	Agriculture	Farmer Creek
LJ Coward	45289U	250	480	Agriculture	Calliope River
LL & PJ Smith	41188U	7.5	15	Agriculture	Calliope River
Lockerbie Pastoral Company Pty Ltd; ARL Wilson	17663U	115	360	Agriculture	Calliope River

Calliope River Basin Resource Operations Plan

Licensee	Licence number	Maximum rate of take (L/s)	Annual volumetric limit (ML)	Purpose	Watercourse
MA Grace; MJ & PW & PS Jefferis	31925U	12	12	Agriculture	Clyde Creek
MA McDonald; Varane Pty Ltd trustee	51683U	30	70	Agriculture	Calliope River
MJ Marsh; GM Williams	177097	12	1	Any	Clyde Creek
Neil Golding Pty Ltd	48482U	65	60	Agriculture	Leixlip Creek
Ochelen Pty Ltd	57464U	17	80	Agriculture	Calliope River
RJ Breslin	31695U	12	18	Agriculture	Double Creek
RT & SD Waterson	41187U	17	60	Agriculture	Leixlip Creek
RT Davidson; AL Hansen	57502U	45	60	Agriculture	Calliope River
The Calliope Golf Club Limited	32534WU	17	40	Any	Leixlip Creek
The Coordinator-General	57439U	17	11	Agriculture	Humpy Creek
W Bailey	51672U	30	30	Agriculture	Double Creek
WSJ Price	57403U	12	48	Agriculture	Double Creek
Yaralla Sports Club Incorporated	173729	34	100	Any	Auckland Creek

a For licence number 57568U, 350 ML based on a total volume of 800 ML with licence number 57567U

b For licence number 48378U, 2 ML allowance included for stock intensive purpose

Note:

The schedule reflects active licences at the date of approval of the resource operations plan. The schedule is used for conversion purposes and is not an indication of the validity of any of the entitlements listed.

Existing licences not listed in the schedule must continue with current conditions.

**Explanatory notes for the Calliope River Basin Resource Operations
Plan**

Table of contents for explanatory notes

Chapter 1—Preliminary	27
Water resource plan implemented through the resource operations plan	27
Name of the resource operations plan	27
Commencement of the resource operations plan	27
Plan area	27
Water to which this plan applies	27
Information about areas	27
Departmental water monitoring data collection standards	27
Metering	28
Sustainable management of water	28
Addressing water resource plan outcomes	28
Glossary	28
Chapter 2—Process for dealing with unallocated water	28
Part 1—Availability of unallocated water	29
Part 2—Unallocated water applications	29
<i>Division 1—Application process</i>	29
<i>Division 2—Assessing applications</i>	30
Part 3—Establishing terms and conditions on water licences	31
Part 4—Deciding an application for a water licence	32
Chapter 3—Replacing an existing authority and amending water licences.....	33
Part 1—Granting a water licence to replace an existing authority	33
Part 2—Amending existing water licences	33
Chapter 4—Dealing with water licences	34
Water licence applications—applications to be refused and applications not accepted	34
Applications to amend maximum rate of take	35
Applications to interfere with water by impounding flow	35
Chapter 5—Monitoring, assessment and reporting.....	36
Water monitoring	36
Ecological performance monitoring and assessment	36
Assessment and reporting	36
Links to other monitoring programs	37
Chapter 6—Amendments to the resource operations plan	37
Part 1—Amendments not requiring public notification	37
Part 2—Amendments requiring public notification	37

The explanatory notes

The explanatory notes are a simplified version of the *Calliope River Basin Resource Operations Plan 2008* ('the plan'). The notes are intended to provide the reader with some explanation and background information on the sections in the plan and should assist the reader's understanding of the proposed rules.

The plan has been made to implement the *Water Resource (Calliope River Basin) Plan 2006* ('the water resource plan'). The plan and the water resource plan apply to surface water, including water in a watercourse, lake or spring and to overland flow water within the Calliope River Basin catchment.

These notes should be read in conjunction with the plan as the detail is contained in the plan itself. These notes are not intended to be comprehensive, but help to guide the reader.

Further information

If you have any questions or require clarification of the provisions in the plan, please contact the Department of Natural Resources and Water, Rockhampton on 1800 822 100 or by email at ROPCalliope@nrw.qld.gov.au.

Section numbers not used

Certain sections of the plan are titled 'section numbers not used'. Because of the size and complexity of the plan, some section numbers have been deliberately left blank. This will allow the plan to be amended at a later date, if necessary, without the whole plan having to be renumbered.

The Calliope River Basin draft resource operations plan 2008

Chapter 1—Preliminary

(Sections 1 to 11)

The preliminary section contains background details about the plan and other general information.

Water resource plan implemented through the resource operations plan

This section states that the purpose of the plan is to implement the *Water Resource (Calliope River Basin) Plan 2006*. The plan sets out the rules and requirements that guide the day-to-day management of surface water, including overland flow water, in order to achieve the objectives of the water resource plan.

Name of the resource operations plan

This section states the name of the plan.

Commencement of the resource operations plan

This plan commences on the first business day after this plan is notified in the *Queensland Government Gazette*.

Plan area

The geographic area to which these rules apply is shown on the map in schedule A—the Calliope River Basin.

Water to which this plan applies

This plan applies to all water in a watercourse, lake or spring and to overland flow water in the plan area.

Information about areas

Interested persons will be able to identify in greater detail where the plan area boundaries lie in relation to property boundaries and watercourses by inspection of digital information held at the Department of Natural Resources and Water offices at either the head office at 41 George Street, Brisbane, or by contacting the regional office at 209 Bolsover Street, Rockhampton.

Departmental water monitoring data collection standards

All water resource monitoring and data retention requirements in the plan must be conducted in accordance with the department's *Water monitoring data collection standards*. The standards address, among other things:

- external standards
- responsibilities
- requirements
- definitions
- accuracy of continuous recorded data
- accuracy of intermittent data
- water sample analysis methods, resolution and minimum reporting limits
- natural ecosystem monitoring methods.

The *Water monitoring data collection standards* are maintained on the department's website and will be updated regularly to ensure that the most recent industry best-practice methods are used. It is

the responsibility of the relevant monitoring body to ensure that it is collecting data in accordance with the most recent version of the standards.

In order to avoid excessive amendments and allow the standards to be regularly updated to reflect best practice, the *Water monitoring data collection standards* are not continually specified in the plan.

Metering

The installation of measuring devices will occur as part of the statewide metering program. By knowing how much water is used and where, metering will allow for improved management of water resources within the plan area.

Schedule 15A of the Water Regulation 2002 will specify those licences that must be metered.

Sustainable management of water

As required under section 98(1) (e) of the *Water Act 2000*, this section specifies the manner in which the plan seeks to sustainably manage the water resources in the plan area.

Addressing water resource plan outcomes

As required under section 98(1)(g) of the *Water Act 2000*, this section specifies the manner in which the plan seeks to achieve the general outcomes and ecological outcomes set out in the water resource plan.

Schedule B of the plan sets out how the rules and requirements of the plan are linked to the outcomes of the water resource plan.

Glossary

Provides further information on particular words used in the plan.

Chapter 2—Process for dealing with unallocated water

(Sections 12 to 69)

This chapter sets out the process for dealing with unallocated water in the plan area.

The chapter is divided into four parts:

- Part 1 is about the availability of unallocated water in the Calliope River Basin.
- Part 2 is about the application process for the unallocated water reserves and how applications will be assessed.
- Part 3 establishes the terms and conditions on a water licence established under Chapter 2
- Part 4 is about advising an applicant of a decision with respect to an application for a water licence and the subsequent granting where applicable.

Section 19 of the Calliope River Basin Water Resource Plan (WRP) identifies a total annual volume of 5500 ML of unallocated water that may be made available for ‘all purposes’ and ‘town water supply’:

19 Limitation on allocation of unallocated water

- (1) The allocation of unallocated water is limited to a total annual volume of 5500 ML for all purposes.
- (2) For purposes of town water supply, the allocation of unallocated water is limited to a total annual volume of 500 ML.
- (3) Despite subsection (2), the chief executive may allow more than 500 ML for purposes of town water supply if the allocation of 500 ML is not sufficient for the purposes and there is no other viable water supply.

A record of the volume of unallocated water granted and the balance of unallocated water remaining will be maintained by the chief executive. This record will be updated after the completion of a release process.

The plan supports section 73(1)(c) of the *Water Act 2000* in that an approved land and water management plan is required before water can be taken under a new licence for irrigation.

Part 1—Availability of unallocated water

The Calliope River Basin Water Resource Plan (WRP) provides for the release of up to 5500 ML/a of unallocated water in the plan area. Unallocated water has been partitioned into two reserves:

- a general reserve of a maximum 5000 ML/a that may be made available for all purposes; and
- a strategic reserve of a minimum of 500 ML/a that may be made available for town water supplies.

Table 1 shows the maximum amount of water that may be granted under this plan. The amount of unallocated water available at the time of this plan's commencement will reduce as water is purchased.

In addition to water that may be granted from the unallocated water reserves, permits may be issued for water required for short-term projects such as the construction and maintenance of roads and bridges. A person may apply for a water permit for taking water under Chapter 2 Part 6 Division 4 of the *Water Act 2000*.

Part 2—Unallocated water applications

Section 212 of the Water Act provides for the allocation of water and granting of a water licence under a process stated in a water resource plan, a resource operations plan or a wild river declaration.

The chief executive may make some or all unallocated water available. Division 1 of this plan provides an application process for the granting of water licences from the general and strategic reserves.

Division 1—Application process

This division outlines the process for making applications for the grant of a water licence.

Application for a water licence from the general reserve

The process commences with the chief executive publicly inviting applications for unallocated water from the general reserve. The public notice must state, but is not limited to:

- the location where water is being made available (this may be the whole plan area or a part thereof);
- the annual volumetric limit of water that is being made available for granting;
- the process for making an application, including any price for the water that is being made available;

- a final date for receipt of applications; and
- any application fee that may apply.

The application made in response to the invitation must:

- be made on the approved form;
- state a proposed purpose, location and annual volumetric limit;
- be accompanied by any application fee; and
- provide any other information required under the notice.

At any time the chief executive may cease the application process for the general reserve and advise applicants.

The release process for an application from the strategic reserve

No public notification or registration of interest is required for an application for a water licence from the strategic reserve. An application for water from the strategic reserve may be made by a local government to the chief executive at any time. The application must:

- be made on the approved form;
- state a proposed purpose, location and annual volumetric limit;
- be accompanied by any application fee; and
- provide any other information required by the chief executive.

Division 2—Assessing applications

Applications will be assessed in accordance with:

- the application and any additional information obtained; and
- the availability of unallocated water in the plan area.

In addition:

- The chief executive must ensure that the proposed take of water is consistent with section 21 of the water resource plan as well as provisions in this resource operations plan.
- An application to take water from the dam known as Lake Callemondah on Auckland Creek must only be from the strategic reserve.
- The chief executive must consider both the volume of water that is to be stored and the median annual run-off from the catchments when an application is for the taking of overland flow water.
- During the assessment, the chief executive may require additional information from the applicant and stipulate a time frame for the provision of information.
- If the applicant fails without reason to provide information requested within the stipulated time, the application must lapse.
- If the application fails to meet the criteria listed in subsections (1), (2) or (3) the chief executive must refuse the application and give the applicant a notice stating the decision.

Part 3—Establishing terms and conditions on water licences

This part details terms and conditions that the chief executive may include on water licences to take unsupplemented water, which may be granted under this chapter.

Terms and conditions that may be required on existing licences are dealt with under Chapter 3 of this plan.

Water licences for taking water from a watercourse, lake or spring

A new water licence to take water from a watercourse, lake or spring must state the following:

- a purpose that must be either ‘agriculture’, ‘town water supply’ or ‘any’—water taken for the purpose of ‘agriculture’ includes irrigation, aquaculture, and intensive animal production (feedlots and piggeries). Water taken for other purposes, such as irrigation of golf courses, non-riparian stock or domestic use or mining and industrial operations will generally be given the purpose of ‘any’. Water taken for town water supply purposes will be given to a local government;
- a maximum instantaneous rate of take;
- a daily volumetric limit—the daily volumetric limit denotes the maximum volume of water that can be diverted on any day expressed as megalitres per day (ML/day). This value is derived by multiplying the daily rate factor for the catchment area available to the licence location from column 4 of Table 3 in schedule C by the annual volumetric limit;
- an annual volumetric limit; and
- a minimum passing flow above which diversion is permitted.

Section 43 of this plan states how the chief executive will determine terms and conditions for a water licence to take water from a watercourse, lake or spring.

Example:

If an applicant applies to take an annual volumetric limit of 200 ML from a location on a watercourse that has a catchment area of 200 km²:

- The minimum passing flow is determined by reference to column 2 of Table 3 in schedule C for a catchment area of 200 km². The value is 70 ML/day.
- The maximum instantaneous rate of take in litres per second is calculated by multiplying the annual volumetric limit by an instantaneous rate factor determined by reference to column 3 of Table 3 in schedule C for a catchment area of 200 km². The instantaneous rate factor is 0.95771.

Maximum instantaneous rate = 0.95771 x 200 = 191.5 litres per second

- The daily volumetric limit in megalitres per day is calculated by multiplying the annual volumetric limit by a daily volumetric limit rate factor determined by reference to column 4 of Table 3 in schedule C for a catchment area of 200 km². The daily volumetric rate factor for a 200km² catchment is 0.0689.

Daily volumetric limit = 0.0689 x 200 = 13.78 ML per day

The maximum instantaneous rate factor includes an adjustment to provide for increased discharge rates when water level is elevated during peak stream flows.

Key point: When designing or selecting a pump unit it is necessary to consider operation at maximum and minimum water level conditions as well as the expected normal operating water level. The pump rate for determining the duty point at normal operating level should be established by converting the daily volumetric limit to a rate in litres per second, based on the hours of operation per day required to meet irrigation requirements. The maximum instantaneous rate, determined in accordance with section 43, will then generally provide for operation during peak flow events when total head is reduced as a result of higher than normal pumping water level.

Water licences for taking overland flow water

The purpose on a water licence to take overland flow water must be either ‘agriculture’, ‘town water supply’ or ‘any’.

The purpose of ‘agriculture’ includes irrigation, aquaculture, and intensive animal production (feedlots and piggeries). Water taken for other purposes, such as irrigation of golf courses, non-riparian stock or domestic use, mining and industrial operations will generally be given the purpose of ‘any’. Water taken for town water supply purposes will be given to a local government.

A water licence to take overland flow water may also state:

- the maximum stored volume;
- the maximum instantaneous rate of take;
- the daily volumetric limit;
- the annual volumetric limit;
- for the taking of overland flow water with unrestricted rate of take (such as a gully dam, which is an earth embankment built across a waterway, valley, depression or drainage line), a flow condition to bypass water downstream of the point of take at times when overland flow water could be taken; and
- for the taking of overland flow water with a restricted rate of take (such as a controlled diversion), a flow condition that water may only be taken when the flow exceeds a designated flow or water trigger level.

When determining the terms and conditions that may be specified on the overland flow water licence, the chief executive must consider, but is not limited to considering:

- information supplied by the applicant;
- the matters specified in section 21 of the water resource plan; and
- the capacity of any proposed works to take and store water.

Part 4—Deciding an application for a water licence

Based on the assessment, the chief executive will advise the successful applicant of the proposed

terms and conditions of the licence and a date by which the applicant must submit written consent accepting the proposed terms and conditions of the licence. This advice will also include the amount payable for the granting of the proposed water licence and a date by which the money must be received. If the proposed conditions are not acceptable to the applicant, and an agreement is not reached, the application lapses. The application will also lapse if written acceptance and the amount payable are not received by the required time.

Where written acceptance and payment of the proposed water licence has been received in accordance with section 46(1)(b), (c) and (d), the licence must be granted and section 212 of the *Water Act 2000* applies.

Chapter 3—Replacing an existing authority and amending water licences

(Sections 70 to 85)

Part 1—Granting a water licence to replace an existing authority

This section applies to the owner of land on which existing overland flow works are situated. As stated in the water resource plan, existing works means works that:

- (a) allow the taking of overland flow water; and
- (b) either
 - (i) were in existence on 4 March 2004; or
 - (ii) were started by 4 March 2004 and completed by 7 May 2004.

Landowners with existing overland flow works have one year from the release of the water resource plan (that is, one year from 15 December 2006) to notify the department of overland flow works.

Where a landowner has provided the department with information about their overland flow works, a water licence authorising the take of overland flow water may be granted by the chief executive to replace an existing authority under section 15 of the water resource plan. This licensing process may require a certified report of the existing works to be signed by a registered professional engineer of Queensland.

Part 2—Amending existing water licences

Existing licences to take water from watercourses or lakes will be amended. These amendments are intended to formalise the original intent of the licence and to ensure that the licences are consistent with the water resource plan and this resource operations plan.

The three main amendments will be:

An annual volumetric limit

This is the maximum volume of water that may be taken under the licence in a water year.

Schedule E lists the annual volumetric limits attached to licences. Determination of the annual volumetric limit by the chief executive is based on the following criteria:

- For a licence that states a volume, the volume stated.
- For a licence stating a ‘maximum area to be irrigated’, the area in hectares multiplied by six will be the volumetric limit in megalitres. The 6 ML/ha has been based on standard crop

irrigation requirements for that area and takes into account water use by a crop for the full year, rainfall, evaporation and other losses for the full water year.

- For a licence attached to land that is not adjacent to a watercourse, lake or spring, an additional allowance will be made if the licence also states that the water is for stock and/or domestic purposes.
- For another authorisation, an annual volumetric limit will be determined by the chief executive, having regard to the purpose of a licence and the original application and investigation of a licence.

A maximum instantaneous rate for taking water

Schedule E lists the maximum instantaneous rate attached to licences. Determination of the maximum instantaneous rate by the chief executive is based on the following criteria:

- If this rate is already stated on the authorisation, the rate will remain the same.
- For an authorisation that does not state a maximum rate, a rate will be determined by the pump size of the development permit linked to the authorisation, having regard to the schedule D pump tables.
- For another authorisation, a rate will be determined by the chief executive, having regard to the original licence application and investigation.

Purpose on a water licence

The purpose of the licence will be amended to be either ‘agriculture’ or ‘any’. There are currently no existing water licences for town water supply. Water taken for the purpose of ‘agriculture’ includes, for example irrigation, aquaculture, and water harvesting use. Water taken for other purposes, such as for irrigation of golf courses, non-riparian stock or domestic use and mining and industrial operations will generally be given the purpose of ‘any’. For licence number 32702U, the purpose of quarrying will continue.

Landholders whose properties adjoin a watercourse, lake or spring do not require a water licence for stock and domestic purposes.

The licences listed in schedule E reflect active licences at the date of approval of the resource operations plan. The licences listed are still subject to the licensing provisions of the *Water Act 2000*. Schedule E is used for conversion purposes and is not an indication of the validity of any of the entitlements listed.

Chapter 4—Dealing with water licences

(Sections 86 to 105)

Any existing or new applications will be dealt with through the process set out in this chapter.

Water licence applications—applications to be refused and applications not accepted

This part describes how all new and existing applications for licences to take water from a watercourse, lake or spring and overland flow water will be refused. This is being done to ensure that unallocated water dealings are equitable. This part applies even if the application was made before the commencement of this plan.

Applications to convert an authority to take overland flow water to a water licence are dealt with under Chapter 3, Part 1 of this plan.

Applications to amend maximum rate of take

A licensee may apply to have the maximum instantaneous rate of take on an existing water licence amended to accommodate replacement of a pump or variation in irrigation cycle. In deciding the application, the chief executive is required to consider matters listed in section 21 of the water resources plan. These matters include:

- water use efficiency;
- availability of alternative water sources;
- impacts of increased rate of take on environmental and cultural values;
- imposing flow conditions to protect low flows and other ecologically significant flows; and
- impacts that increased take may have on other water users.

When determining an application to amend the instantaneous rate of take on a water licence the chief executive must consider matters in section 74 of this plan. These matters include:

- the existing instantaneous rate for the water licence as stated in schedule E of this plan;
- the basis for determining maximum instantaneous rates for licences in schedule E in the plan including:
 - the rate specified on the subject licence prior to development of this plan;
 - schedule D which provides an instantaneous rate for various pump types and sizes; and
 - the original licence application and investigation.
- If a licence is amended to include an increased maximum instantaneous rate of take and the licence does not have a daily volumetric limit then a daily volumetric limit determined by the chief executive must be included.

➔ **Key point:** Increasing the instantaneous rate of take for a water licence to accommodate replacing equipment or changing agronomic and irrigation practices may result in a licence holder gaining a greater share of the water resource available during critical periods. Inclusion of a daily volumetric limit somewhat less than the volume that could be diverted by the pump unit, operating continuously over a period up to 24 hours at the maximum instantaneous rate, provides a mechanism for the chief executive to consider applications under a framework that ensures potential impacts on other water users are addressed.

Applications to interfere with water by impounding flow

This section applies to licences to interfere with water in a watercourse by impounding flow. This situation may occur, for example, where a person wants to construct a weir at their pump site.

The section states that all applications to construct a weir in the Calliope River will be refused. However, weirs may be authorised on tributary streams of the Calliope, or coastal streams elsewhere in the catchment, but they will be restricted to a maximum height of 1 metre and a maximum capacity of 2 ML.

Development permits for weirs will be assessed and issued under the *Integrated Planning Act 1997*.

For some structures, other permissions may be required from the local council, the Department of Primary Industries and Fisheries (DPI&F) or the Environmental Protection Agency.

DPI&F is responsible for assessing the need for flow impoundment mitigation measures. An assessment is done by DPI&F to see whether or not an approval should be issued and whether a fishway needs to be built with the structure. DPI&F may impose conditions on a development

approval for constructing or raising a waterway barrier about the design of a fishway, monitoring the operations of a fishway and any contingency plan in case a fishway does not operate to allow desired level of fish passage. Further information is available from the Department of Primary Industries and Fisheries, including <http://www2.dpi.qld.gov.au/fishweb/1932.html>.

Chapter 5—Monitoring, assessment and reporting

(Sections 106 to 115)

The department will be collecting data and information on the quantity, flows, and use of water in the catchment.

Water monitoring

The department will collect information on water quantity and flow from the gauging station network. This will lead to better decision making about the effects of taking water from the system. This information will contribute to an improved information base for future water planning within the plan area.

Data will be collected and recorded in order to determine current and future trends in water use and water use efficiency. Several years of data collection may be required before trends can be determined. Data will be collected from a variety of sources, including water meters, agency monitoring programs, and associated programs. This data will be made available to the public.

Ecological performance monitoring and assessment

Natural ecosystem monitoring will involve identifying ecological assets that are linked to the ecological outcomes of the water resource plan. An ecological asset can be a species, group of species, a biological function, or particular ecosystem or place of value for which water is critical.

It is impractical to monitor every species or process associated with the identified ecological assets. Instead, indicators that are representative of each asset will be assessed. Monitoring of an indicator will involve looking for evidence that the water requirements of an ecological asset (or its representative indicator) have been provided. A detailed understanding of the biology of organisms is required in order to find critical ecological responses (such as breeding behaviour and successful recruitment) that depend on specific aquatic conditions (for example, water depth, water velocity, length of time of inundation and seasonal timing).

The department will need to determine if flow requirements specified in the rules of this plan provide opportunities for an ecological response in a risk assessment framework (i.e. determining the risk that water management poses to the ecological assets).

Where required, further investigations will be undertaken to increase understanding of the environmental water requirements of the organisms. The monitoring program will be altered when necessary in response to new and improved information.

Assessment and reporting

Several years of data collection may be required before trends in the information can be determined. It is necessary to establish a long-term picture of the catchment, so that water management decisions can be based on sound evidence and not be affected by short-term variations. The minister produces a publicly available annual report detailing water use and monitoring programs, which is available from the department in January each year.

The department will, on an ongoing basis, assess all data and information to determine if the outcomes specified in the water resource plan have been addressed. This information will be used in the minister's report on the effectiveness of the rules in meeting the intent of the water resource

plan. This report will state whether or not the water resource plan needs to be amended or remains current. If the water resource plan needs to be amended, then the department will have to draft a new resource operations plan.

Links to other monitoring programs

Information gathered by other monitoring programs may be used to help assess the performance of general or ecological outcomes detailed in the water resource plan.

Other monitoring programs carried out in the Calliope River Basin plan area seek to address differing issues and hence involve the collection of different types of information. These programs are often conducted by bodies such as the Environmental Protection Agency, the Department of Primary Industries and Fisheries, universities or research groups. These programs might include short-term, local projects of two or three years duration that are targeted at particular issues. Although they are not directly related to the plan, they may provide additional data and findings for assessment purposes.

Chapter 6—Amendments to the resource operations plan

(Sections 116 to 125)

This chapter states the amendments that can be made to the plan under Sections 106(b) and 105(5) of the *Water Act 2000*.

Part 1—Amendments not requiring public notification

For amendments made under section 106(b) of the Water Act, it is not necessary to provide public notification of the amendments, or allow for submissions, because the plan already ‘states’ the type of amendments that can be made by the chief executive. The plan states that the following aspects of the plan can be amended without public notification:

- an amendment that is necessary to implement an amendment to the water resource plan. These sorts of changes are to correct minor errors or other changes that are not of substance (i.e. typographic errors or corrections to names etc). If this sort of change is made to the water resource plan, then it may also be necessary to change the resource operations plan to ensure consistency between the two plans; and
- changes to monitoring requirements to allow for more efficient monitoring of water quantity, water quality or biological indicators.

Part 2—Amendments requiring public notification

For amendments made under section 105(5) of the Water Act, the chief executive must release a draft amended resource operations plan and invite submissions before finalising the plan.