

Gold Coast Resource Operations Plan

December 2009

Amended November 2010

Prepared by:

Water Planning, South East and Water Services South, South East Region

Department of Environment and Resource Management

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November 2010

#29446

Foreword

This amended Gold Coast Resource Operations Plan (the plan) further implements the Water Resource (Gold Coast) Plan 2006 beyond the initial resource operations plan which was finalised in December 2009.

The raising of the Hinze Dam wall by 15 metres (Hinze Dam Stage 3 project) necessitates changes to the existing ROP so that it incorporates operational management requirements for this infrastructure upgrade in the Nerang Water Supply Scheme.

In parallel, the plan provides for a significant new water allocation to be granted to the SEQ Water Grid Manager from the strategic reserve established in the Water Resource (Gold Coast) Plan 2006.

The plan takes into account all properly made submissions received following the release of a draft amended plan in April 2010. The plan is an important component of the government's ongoing program for securing water resources to sustain growth and prosperity in South East Queensland.

I would like to thank those who participated in bringing this important plan to completion.

Greg Claydon
Acting Deputy Director-General
Department of Environment and Resource Management

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Chapter 1 Preliminary

1 Short title

- (1) This resource operations plan may be cited as the Gold Coast Resource Operations Plan 2009.
- (2) Reference in this document to ‘this plan’ means the Gold Coast Resource Operations Plan 2009.

2 Commencement of the Resource Operations Plan

- (1) This plan commenced on 7 December 2009.
- (2) The amendment to this plan under section 105(5) of the *Water Act 2000* commences on the first business day after notification in the Queensland Government Gazette.

3 Purpose of plan

This plan implements the Water Resource (Gold Coast) Plan 2006.

4 Interpretation of words used in this plan

The glossary in Attachment 1 provides further information on particular words used in this plan.

5 Plan area

This plan applies to the area shown as the plan area on the map in Attachment 2.

6 Water to which this plan applies

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

- (a) water in a watercourse or lake;
- (b) water in springs not connected to—
 - (i) artesian water; or
 - (ii) subartesian water connected to artesian water.

7 Water management areas—Water Regulation 2002, section 56(4A)

The water management area shown on the map in Attachment 3 is a water management area for this plan.

8 Resource operations plan zones

- (1) Each of the zones shown on the maps in Attachments 3 and 4 are resource operations plan zones (zones) for this plan.

- (2) Each zone includes—
 - (a) each part of a watercourse, lake or spring that lies within the zone; and
 - (b) those sections of tributaries where there is access to flow or pondage from a watercourse or lake within the zone.

9 Information about areas

- (1) The exact location of the boundaries of the plan area, subcatchment areas, resource operations plan zones and the water management 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 details of the boundaries.¹

10 Purpose of a water allocation

- (1) Water taken under a water allocation must only be used for the purpose stated on that water allocation.
- (2) Subsection 1 does not apply to water taken under seasonal water assignment.

11 Resource operations licence holder

- (1) A resource operations licence holder for this plan is the resource operations licence holder for the Nerang Water Supply Scheme.
- (2) The area managed under the resource operations licence for the Nerang Water Supply Scheme is shown on the map in Attachment 4.

12 Departmental water monitoring data collection standards

- (1) Where this plan requires monitoring by a resource operations licence holder, including measurement, collection, analysis and storage of data, the resource operations licence holder 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.
- (3) The chief executive must notify the resource operations licence holder at least 20 business days before any substantive changes are made to the Water Monitoring Data Collection Standards.

¹ The boundaries in digital electronic form may be inspected at the department's regional office at the Landcentre, corner of Main and Vulture Streets, Woolloongabba, Qld 4102.

² The Water Monitoring Data Collection Standards can be accessed at <www.derm.qld.gov.au> or alternatively, inspected at the department's regional office at the Landcentre, corner of Main and Vulture Streets, Woolloongabba, Qld 4102.

13 Departmental water monitoring data reporting standards

- (1) Where this plan requires transfer of data or reporting by a resource operations licence holder, the resource operations licence holder must ensure the transfer or reporting is consistent with the Water Monitoring Data Reporting Standards.³
- (2) The Water Monitoring Data Reporting Standards may be reviewed and updated by the chief executive at any time.
- (3) The chief executive must notify the resource operations licence holder at least 20 business days before any substantive changes are made to the Water Monitoring Data Reporting Standards.

14A Interim program

- (1) The chief executive and resource operations licence holder must implement requirements of this plan as soon as is practicable.
- (2) Subsections 3 to 11 apply where a resource operations licence holder is unable to meet the requirements of this plan.
- (3) The resource operations licence holder must—
 - (a) within two months of commencement of this section, submit a statement of programs currently in existence to the chief executive for approval; and
 - (b) within six months of commencement of this section, submit a program for meeting the requirements of this plan to the chief executive for approval, including a timetable and interim methods to be used.
- (4) The resource operations licence holder may, where an emergency or operational incident results in an inability to comply with any rules or requirements of this plan, submit an interim program for meeting the requirements of this plan to the chief executive for approval, including a timetable and interim methods to be used.
- (5) Where the submitted program relates to the Water Monitoring Data Collection Standards, the program must include the accuracy of methods currently used.
- (6) The chief executive, in considering any submitted program, may request additional information.
- (7) The chief executive, in considering any submitted program, may either—
 - (a) approve the program with or without conditions;
 - (b) amend and approve the amended program; or
 - (c) require the resource operations licence holder to submit a revised program.
- (8) Within 10 business days of making a decision on a program submitted under this section, the chief executive must notify the resource operations licence holder of the decision.
- (9) Following approval of the program by the chief executive, the resource operations licence holder:
 - (a) must implement and operate in accordance with the approved program; and
 - (b) make public details of the approved program on its internet site.

³ The Water Monitoring Data Reporting Standards can be accessed at < www.derm.qld.gov.au > or alternatively, inspected at the department's regional office at the Landcentre, corner of Main and Vulture Streets, Woolloongabba, Qld 4102.

- (10) Where there is conflict between the provisions of this plan and the provisions of an approved program, the approved program prevails for the time that the program is in place.
- (11) Where this section applies, the resource operations licence holder may continue to operate under the existing program until the program submitted under this section is approved.

15 Operating and environmental management rules and monitoring requirements

- (1) The operating and environmental management rules and monitoring requirements of this plan do not apply in situations where carrying out these rules or requirements would be unsafe to a person or persons.
- (2) Under circumstances where subsection 1 applies, the resource operations licence holder—
 - (a) must comply with the reporting requirements for operational or emergency incidents in accordance with sections 132 and 133 of this plan; and
 - (b) may submit an interim program for implementing the rules and requirements of this plan under section 14A of this plan.

16 Sustainable management of water

- (1) This plan, in implementing the Water Resource (Gold Coast) Plan 2006, provides for the sustainable management of water by—
 - (a) allowing for the allocation of water and contributing to the fair, orderly and efficient allocation of water to meet community needs, including economic development in accordance with ecologically sustainable development principles by—
 - (i) stating processes for dealing with unallocated water;
 - (ii) granting authorisations for the taking of and interfering with water;
 - (iii) establishing water allocations that are tradable and separate from land; and
 - (iv) specifying rules for water trading.
 - (b) protecting the biological diversity and health of natural ecosystems and contributing to the protection and, if practicable, reversing the degradation of water, watercourses, lakes, springs, aquifers, natural ecosystems and other resources by—
 - (i) detailing the operating, environmental management and water sharing rules for the Nerang Water Supply Scheme;
 - (ii) detailing water sharing arrangements for unsupplemented water allocations;
 - (iii) detailing arrangements for the collection and assessment of data by the chief executive relating to Water Resource (Gold Coast) Plan 2006 general and ecological outcomes; and
 - (iv) detailing water and natural ecosystems monitoring responsibilities of the resource operations licence holder for the Nerang Water Supply Scheme.
 - (c) contributing to improving the confidence of water users regarding the availability and security of water entitlements by—
 - (i) stating processes for dealing with unallocated water;

- (ii) detailing the operating, environmental management and water sharing rules for the Nerang Water Supply Scheme;
 - (iii) detailing rules for dealing with water allocations in the Nerang Water Supply Scheme;
 - (iv) detailing water sharing rules for unsupplemented water allocations;
 - (v) detailing water and natural ecosystem monitoring responsibilities of the resource operations licence holder for the Nerang Water Supply Scheme;
 - (vi) detailing processes for dealing with applications for water licences relating to unsupplemented water in watercourses, lakes and springs;
 - (vii) detailing arrangements for the collection and assessment of data by the chief executive relating to Water Resource (Gold Coast) Plan 2006 outcomes; and
 - (viii) detailing stated amendments under sections 106(b) and 105(5) of the *Water Act 2000* that can be made to this plan.
- (d) 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) clearly 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.

17 Addressing water resource plan outcomes

- (1) This plan addresses Water Resource (Gold Coast) Plan 2006 outcomes by—
- (a) specifying processes, rules and limits, the application of which are consistent with environmental flow objectives and water allocation security objectives specified in the Water Resource (Gold Coast) Plan 2006; and
 - (b) providing monitoring and reporting arrangements to assist in the ongoing assessment of whether water management arrangements in the plan area will contribute to the achievement of Water Resource (Gold Coast) Plan 2006 outcomes.
- (2) Attachment 5 lists the outcomes of the Water Resource (Gold Coast) Plan 2006 and how the rules of this plan are linked to those outcomes.

18 to 22 Section numbers not used

Chapter 2 Unallocated water

23 Record of volume of unallocated water

- (1) The chief executive may develop a register of the volume of unallocated water available.
- (2) This register must be updated after the granting of an entitlement.

24 Availability of unallocated water

Unallocated water held as strategic reserve and general reserve is reserved for future use.

25 to 34 Section numbers not used

Chapter 3 Granting, amending and converting authorisations

Part 2 Rules for amending water licences for taking unsupplemented water

36 Amending a water licence for taking unsupplemented water

When amending a water licence in accordance with section 217 or section 218 of the *Water Act 2000*, the chief executive may, under section 47 of the Water Resource (Gold Coast) Plan 2006, amend the licence to include the following—

- (a) the purpose for which the water may be taken under the licence;
- (b) the annual volumetric limit for the licence as determined under section 48 of the Water Resource (Gold Coast) Plan 2006;
- (c) the maximum rate at which water may be taken under the licence as determined under section 49 of the Water Resource (Gold Coast) Plan 2006; and
- (d) the flow conditions for the licence.

Part 4 Granting a resource operations licence to meet future water requirements

44 Application of Part 4

This part states a process under section 108 of the *Water Act 2000* for granting a resource operations licence to meet future water requirements.

45 Applying for a resource operations licence

- (1) This section applies to the proposed owner of infrastructure identified in section 24 of the Water Resource (Gold Coast) Plan 2006.
- (2) The chief executive may give notice to the proposed owner that the proposed owner must apply to the chief executive for a resource operations licence.
- (3) The application must—
 - (a) be in the approved form;
 - (b) include the following—
 - (i) details of the proposed infrastructure;
 - (ii) an assessment of the impact of constructing the infrastructure on—
 - (A) the supply of water managed under existing resource operations licences;
 - (B) the operating arrangements under existing resource operations licences;
 - (C) existing water licences to take water;
 - (D) other existing authorisations, other than water permits, that may be affected by the proposed infrastructure;

- (iii) the applicant's proposal for minimising the impact assessed and mentioned in subparagraph (ii);
 - (iv) proposed operating arrangements for the infrastructure;
 - (v) written evidence of approval by the Coordinator-General that the applicant is the proponent of the infrastructure;
 - (vi) any other information the applicant considers will enable the chief executive to decide the application; and
 - (c) be accompanied by the prescribed fee.
- (4) The chief executive may give a copy of the application to any entity the chief executive considers appropriate.

46 Additional information may be required

- (1) The chief executive may, by notice, require—
- (a) the applicant to give additional information about the application; or
 - (b) any information included in the application, or any additional information required under subsection (a) to be verified by statutory declaration.
- (2) An applicant must provide information where requested, within the time requested otherwise the application will lapse.

47 Matters the chief executive must consider

- (1) In deciding the application, the chief executive must consider—
- (a) the application and any additional information given about the application;
 - (b) any conditions which are appropriate for the application if it were to be approved and granted; and
 - (c) the public interest.
- (2) Subsection 1 does not limit the matters the chief executive may consider.

48 Deciding an application for a resource operations licence

- (1) Where the chief executive is satisfied that the application should be approved, the chief executive must approve the application—
- (a) wholly, or in part; and
 - (b) with or without conditions.
- (2) Where the chief executive is not satisfied that the application should be approved, the chief executive must, within 30 business days, notify the applicant.

Part 5 Amending a resource operations licence to meet future water requirements

49 Application of Part 5

This part states a process under section 111A of the *Water Act 2000* for amending a resource operations licence to meet future water requirements.

Division 1 Amendment by the chief executive

50 Amending a resource operations licence by the chief executive

- (1) The chief executive may amend—
 - (a) a resource operations licence granted under the *Water Act 2000* to the extent the chief executive considers necessary; or
 - (b) any other resource operations licence to the extent the chief executive considers necessary as a consequence of amending a resource operations licence granted under the *Water Act 2000*.
- (2) Before the chief executive acts under subsection 1, the chief executive must give the resource operations licence holder notice of the proposed amendment.
- (3) The notice must—
 - (a) state the following—
 - (i) a summary of the proposed amendment;
 - (ii) the reasons for the proposed amendment;
 - (iii) that written submissions may be made by the resource operations licence holder about the proposed amendment;
 - (iv) the day by which, the person to whom, and the place where the submissions must be made; and
 - (b) include a copy of the proposed amendment.
- (4) The day stated under subsection 3(a) (iv) must be at least 30 business days after the notice is given.

51 Matters the chief executive must consider

- (1) Prior to deciding whether to amend a resource operations licence, the chief executive must consider—
 - (a) any submissions made by the resource operations licence holder about the proposed amendment;
 - (b) the public interest; and
 - (c) the original application under section 45 of this plan for the resource operations licence and any additional information given about the application.
- (2) Subsection 1 does not limit the matters the chief executive may consider.

52 Deciding whether to amend a resource operations licence

- (1) If the chief executive is satisfied that the resource operations licence should be amended, the chief executive must amend the resource operations licence under section 111A of the *Water Act 2000*.
- (2) If the chief executive is not satisfied that the resource operations licence should be amended, the chief executive must, within 30 business days, notify the resource operations licence holder.

Division 2 Amendment on application by the holder

53 Amending a resource operations licence on application by the resource operations licence holder

- (1) The holder of a resource operations licence granted under the *Water Act 2000* may apply to the chief executive to amend a resource operations licence under section 111A of the *Water Act 2000*.
- (2) The application must—
 - (a) be in the approved form;
 - (b) include a summary of the amendment required and the reasons for the amendment; and
 - (c) be accompanied by the prescribed fee.
- (3) The chief executive may give a copy of the application to any entity the chief executive considers appropriate.
- (4) This section does not apply where the chief executive is satisfied that the infrastructure is substantially complete and may be regarded as operational.
- (5) Where subsection 4 applies, the chief executive must amend this plan in accordance with section 148 of this plan.

54 Additional information may be required

- (1) The chief executive may, by notice, require—
 - (a) the applicant to give additional information about the application; or
 - (b) any information included in the application, or any additional information required under subparagraph (a) to be verified by statutory declaration.
- (2) An applicant must provide information where requested within the time requested otherwise the application will lapse.

55 Matters the chief executive must consider

- (1) In deciding the application, the chief executive must consider—
 - (a) the application and any additional information given about the application; and
 - (b) the public interest.
- (2) Subsection 1 does not limit the matters the chief executive may consider.

56 Deciding whether to amend a resource operations licence

- (1) Where the chief executive is satisfied that the application to amend a resource operations licence should be approved, the chief executive must approve the application—
 - (a) wholly or in part; and
 - (b) with or without conditions.
- (2) In amending a resource operations licence under this section, the chief executive must comply with the requirements of section 111A of the *Water Act 2000*.

- (3) Where the chief executive is not satisfied that the resource operations licence should be amended, the chief executive must, within 30 business days, notify the resource operations licence holder.

Part 6 Granting a supplemented water allocation from the strategic reserve

57 Process for granting a water allocation from the strategic reserve

The chief executive must grant a water allocation from the strategic reserve in accordance with Attachment 9.

58 to 61 Section numbers not used

Chapter 4 Dealing with water licence applications

62 Scope of Chapter 4

This chapter sets out a process for dealing with applications for water licences to take or interfere with water from a watercourse, lake or spring.

63 Dealing with applications

- (1) The chief executive must not make a decision that—
 - (a) would increase the average volume of water available to be taken in the plan area in accordance with section 19 of the *Water Resource (Gold Coast) Plan 2006*; or
 - (b) results in the inability to meet any of the outcomes in Part 3 of the *Water Resource (Gold Coast) Plan 2006*; or
 - (c) results in the inability to meet any of the objectives in Part 4 of the *Water Resource (Gold Coast) Plan 2006*.
- (2) The chief executive must deal with the application in accordance with section 205 and Chapter 2, part 6, division 2, subdivisions 1 and 2 of the *Water Act 2000* if the chief executive is satisfied that the granting of the application would not have any of the effects mentioned in subsection 1.
- (3) The chief executive must refuse the application if the chief executive is satisfied that the granting of the application would have any of the effects mentioned in subsection 1.

64 to 68 Section numbers not used

Chapter 5 Nerang Water Supply Scheme

69 Application of Chapter 5

This chapter applies to—

- (a) the resource operations licence holder for the Nerang Water Supply Scheme; and
- (b) all water allocations associated with the Nerang Water Supply Scheme.

Part 1 Operating and environmental management rules

70 Use of watercourses for distribution

The resource operations licence holder must only use the following watercourses for the supply, storage and distribution of supplemented water—

- (a) the ponded area of the Hinze Dam at AMTD 36.4 km on the Nerang River;
- (b) the ponded area of the Little Nerang Dam at AMTD 16.1 km on Little Nerang Creek; and
- (c) Little Nerang Creek downstream of Little Nerang Dam at AMTD 16.1 km to AMTD 0 km.

71 Operating levels for infrastructure

- (1) The operating levels for infrastructure in the Nerang Water Supply Scheme are specified in Attachment 6, Table 1 and Table 2.
- (2) The resource operations licence holder must not release water from infrastructure when the water level in that infrastructure is at or below its minimum operating level.
- (3) The resource operations licence holder must not release water from infrastructure unless it is a release required under section 72A of this plan.

72A Releases and supply from infrastructure

- (1) The resource operations licence holder must make releases from the following infrastructure—
 - (a) from Hinze Dam release:
 - (i) 7.25 ML/day when the water level in Hinze Dam is above EL 45.6 m AHD; or
 - (ii) 12 ML/day when the flow rate at Numinbah gauging station 146015A on the Nerang River is greater than 100ML/day and when the water level in Hinze Dam is above EL 45.6 m AHD;
 - (b) from Little Nerang Dam release 3 ML/day when the water level in Little Nerang Dam is above EL 139.3 m AHD.
- (2) The resource operations licence holder must not supply more than 300 ML/day for water allocations.

73 Quality of water released

When releasing water from Hinze Dam or Little Nerang Dam, the resource operations licence holder must draw water from the inlet level that optimises the quality of water released.

74 Change in rate of release from infrastructure

The resource operations licence holder must minimise the occurrence of adverse environmental impacts by ensuring that any reduction or increase in the rate of release of water from Hinze Dam or Little Nerang Dam occurs incrementally.

Part 2 Water sharing rules**Division 1 Announced allocations****75 Announced allocations**

The resource operations licence holder must—

- (a) calculate an announced allocation for the high priority group for use in defining the share of water available to be taken under water allocations in the high priority group;
- (b) use the water sharing rules specified in this part to calculate announced allocations throughout the water year;
- (c) calculate and set the announced allocation for each priority group to take effect on the first day of each water year;
- (d) following the commencement of a water year—
 - (i) recalculate the announced allocation to take effect no later than five business days following the first day of the month;
 - (ii) reset the announced allocation if a recalculation indicates that the recalculated announced allocation would—
 - (A) increase by five or more percentage points; or
 - (B) increase to 100 per cent.
- (e) within five business days of setting an announced allocation under subsection 1(c) or the first calendar day of every month when resetting the announced allocation under subsection 1(d)—
 - (i) make public details of the announced allocation; and
 - (ii) make public details of the announced allocation, including parameters for determining the announced allocation, on the resource operations licence holder's internet site for the Nerang Water Supply Scheme.
- (f) not reduce the announced allocation during a water year;
- (g) round the announced allocation to the nearest whole percentage point; and
- (h) not set an announced allocation that is greater than 100 per cent.

76 Announced allocation for high priority water allocations

- (1) The announced allocation for high priority water allocations in the Nerang Water Supply Scheme must be as follows—
 - (a) 100 per cent when the level in Hinze Dam is greater than EL. 73.00 m AHD; and
 - (b) when the water level of water stored in Hinze Dam is equal to or less than EL 73.00 m AHD the announced allocation percentage for high priority water allocations must be calculated using the following formula:

$$AA_{HP} = \left\{ \frac{UV + DIV_{HP}}{HPA} \right\} \times 100$$

- (2) The parameters used in the announced allocation formula are detailed in Attachment 6, Table 3.

77 Taking water under water allocation

The total volume of water taken under water allocation in a water year must not exceed the nominal volume for the water allocation multiplied by the announced allocation and divided by 100.

Division 2 Critical water sharing arrangements**78 Critical water sharing arrangements**

- (1) Critical water sharing arrangements are in force when the water level in Hinze Dam is equal to or less than EL 73.00 m AHD.
- (2) During times when critical water sharing arrangements are in force the resource operations licence holder must calculate the announced allocation for high priority water allocations in accordance with section 76 of this plan.

Part 3 Dealing with water allocations**79 Scope of Part 3**

This part provides for dealings with water allocations managed by the resource operations licence holder for the Nerang Water Supply Scheme.

Division 1 Subdivision or amalgamation of water allocations**80 Permitted subdivisions or amalgamations**

- (1) Subdivision of a water allocation is permitted where—
 - (a) the sum of the nominal volumes of the new water allocations is equal to the nominal volume of the water allocation that is being subdivided; and
 - (b) the location and priority group of the new water allocations are the same as the location and priority group of the water allocation being subdivided.
- (2) Amalgamation of water allocations is permitted where—

- (a) the nominal volume of the new water allocation is equal to the sum of the nominal volumes of the water allocations that are being amalgamated; and
- (b) the location and priority group of water allocations that are being amalgamated are the same.

81 Prohibited subdivisions or amalgamations

- (1) Subdivision of a water allocation is prohibited where—
 - (a) the sum of nominal volumes of the new water allocations is not equal to the nominal volume of the water allocation being subdivided;
 - (b) the location and priority group of the new water allocations are not the same as those of the water allocation being subdivided; or
 - (c) the nominal volume of a new water allocation is less than one megalitre.
- (2) Amalgamation of water allocations is prohibited where—
 - (a) the nominal volume of the new water allocation is not equal to the sum of the nominal volumes of the water allocations being amalgamated; or
 - (b) the location and priority group of the water allocations being amalgamated are not the same.

Division 2 Water allocation change rules

82 Prohibited changes

The following changes are prohibited—

- (a) a change to the purpose or location of a water allocation; and
- (b) a change to a priority group that is not specified in the Water Resource (Gold Coast) Plan 2006.

Division 3 Other changes

83 Application for changes not specified as permitted or prohibited

An application for a change to a water allocation that is not specified as permitted or prohibited may be made in accordance with section 130 of the *Water Act 2000*.

Part 4 Seasonal water assignment rules

84 Seasonal water assignment rules

- (1) The resource operations licence holder may approve a seasonal assignment of a volume of water provided that the volume of the seasonal water assignment is no greater than the unused volume that may be taken under the authority of the water allocation.
- (2) The resource operations licence holder is responsible for dealing with applications for seasonal water assignment where the resource operations licence holder distributes to the assignee.

85 to 90 Section numbers not used

Chapter 6 Rules for unsupplemented water allocations

Part 1 Water sharing rules

91 Application of Part 1

This part states the water sharing rules for unsupplemented water allocations located in the Lower Nerang Water Management Area.

93 Taking water under a water allocation

The total volume of water taken under a water allocation in a water year must not exceed the annual volumetric limit for the water allocation.

94 Access rules for water allocations

The holder of a water allocation located in the Lower Nerang Water Management Area must not take water under an allocation unless—

- (a) water is taken at a rate not exceeding the maximum rate on the allocation;
- (b) water is taken from the location on the allocation; and
- (c) the allocation holder complies with any special conditions on the allocation.

Part 2 Dealing with water allocations

95 Scope of Part 2

This part states the rules for dealing with unsupplemented water allocations located in the Lower Nerang Water Management Area.

Division 1 Subdivision or amalgamation of water allocations

96 Permitted subdivisions or amalgamations

- (1) The subdivision of a water allocation into two or more water allocations is permitted where—
 - (a) the new water allocations have the same purpose and location; and
 - (b) the nominal volume, annual volumetric limit, any daily or monthly volumetric limit and maximum rates of take of each of the new water allocations is in the same proportion as the nominal volume, annual volumetric limit, any daily or monthly volumetric limit and maximum rate of take of the water allocation that is being subdivided; and
 - (c) the sum of the nominal volumes, annual volumetric limits, any daily or monthly volumetric limit, and maximum rates of take of the new water allocations equal the nominal volume, annual volumetric limit, any daily or monthly volumetric limit, and maximum rate of take of the water allocation that is being subdivided.

- (2) Two or more water allocations may be amalgamated into a single water allocation where—
 - (a) the water allocations have the same purpose and location; and
 - (b) the nominal volume, annual volumetric limit, any daily or monthly volumetric limit, and maximum rate of take of the new water allocation are equal to the sum of the nominal volumes, annual volumetric limits, any daily or monthly volumetric limits, and maximum rates of take of the water allocations that are being amalgamated.

97 Prohibited subdivisions or amalgamations

- (1) The subdivision of a water allocation into two or more water allocations is prohibited where—
 - (a) the new water allocations do not have the same purpose and location;
 - (b) the sum of the nominal volumes, annual volumetric limits, any daily or monthly volumetric limits, and maximum rates of take of the proposed water allocations are not equal to the nominal volume, annual volumetric limit, any daily or monthly volumetric limit, and maximum rate of take of the water allocation that is being subdivided; or
 - (c) the nominal volume of a new water allocation is less than one megalitre.
- (2) The amalgamation of two or more water allocations into a single water allocation is prohibited where—
 - (a) the existing water allocations being amalgamated do not have the same purpose and location; or
 - (b) the nominal volume, annual volumetric limit, any daily or monthly volumetric limit, and maximum rate of take of the proposed water allocation are not equal to the sum of the nominal volumes, annual volumetric limits, any daily or monthly volumetric limits, and maximum rates of take of the existing water allocations that are being amalgamated.

Division 2 Water allocation change rules

98 Prohibited changes

The following changes are prohibited—

- (a) a change to the purpose or location of a water allocation; and
- (b) a change to the water allocation group of a water allocation.

Division 3 Other changes

99 Application for changes not specified as permitted or prohibited

An application for a change to a water allocation that is not specified as permitted or prohibited may be made in accordance with section 130 of the *Water Act 2000*.

Part 3 Seasonal assignment rules

100 Application of Part 3

This part provides the seasonal assignment rules for unsupplemented water allocations located in the Lower Nerang Water Management Area.

101 Seasonal water assignment rules

The chief executive may approve a seasonal assignment of an unsupplemented water allocation—

- (a) where the location of the seasonally assigned volume is not changed;
- (b) where the conditions under which water may be taken under seasonal assignment are the same as the conditions of the water allocation that is being seasonally assigned;
- (c) if the volume of the seasonal assignment is—
 - (i) less than the annual volumetric limit of the water allocation—where the maximum rate of take for the seasonal water assignment is in proportion to the share of the annual volumetric limit of the water allocation that is being seasonally assigned; or
 - (ii) equal to the annual volumetric limit of the water allocation—where the maximum rate for the seasonal water assignment is equal to the maximum rate and any daily or monthly volumetric limit of the water allocation that is being seasonally assigned.

102 to 107 Section numbers not used

Chapter 7 Performance assessment

108 Water monitoring

- (1) The chief executive must measure or collect and keep publicly available, records of—
 - (a) water quantity;
 - (b) water taken;
 - (c) groundwater levels;
 - (d) nominal volume of water permanently traded and seasonally assigned;
 - (e) the number of permanent trades and seasonal assignments; and
 - (f) prices for water permanently traded.
- (2) The chief executive may use information collected to support water assessment and reporting.

109 Natural ecosystems monitoring

The chief executive must collect and keep publicly available information on—

- (a) ecological assets that are linked to the ecological outcomes of the Water Resource (Gold Coast) Plan 2006; and
- (b) the critical water requirements of ecological assets, including the provision of these requirements under the Water Resource (Gold Coast) Plan 2006.

110 Assessment

The chief executive must make ongoing assessments of whether the trends in the data measured, collected and recorded under section 108 and section 109 of this plan indicate that outcomes specified in the Water Resource (Gold Coast) Plan 2006 are being achieved.

111 to 115 Section numbers not used

Chapter 8 Resource operations licence holder monitoring and reporting

116 Scope of Chapter 8

This chapter sets out the monitoring and reporting requirements that apply to—

- (a) the resource operations licence holder for the Nerang Water Supply Scheme; and
- (b) all water allocations associated with the Nerang Water Supply Scheme.

117 Monitoring data must be made available

The resource operations licence holder must provide any monitoring data required under this chapter to the chief executive upon request and within the time requested.

Part 1 Monitoring requirements

Division 1 Water quantity

118A Stream flow and infrastructure water level

- (1) The resource operations licence holder must record infrastructure water level and volume and stream flow data in accordance with Attachment 6, Table 4.
- (2) Infrastructure inflows may be determined based upon an infrastructure inflow derivation technique supplied by the resource operations licence holder.
- (3) The infrastructure inflow derivation technique must be supplied to the chief executive for approval within 40 business days of the commencement of this section.

119 Releases from infrastructure

- (1) This section applies to the following infrastructure—
 - (a) Hinze Dam; and
 - (b) Little Nerang Dam.
- (2) The resource operations licence holder must measure and record for each release of water from infrastructure listed in subsection 1—
 - (a) the daily volume released;
 - (b) the release rate and for each change in release rate—
 - (i) the date and time of the change; and
 - (ii) the new release rate.
 - (c) the reason for each release; and
 - (d) the device used for each release.

120 Announced allocations

The resource operations licence holder must record details of announced allocation determinations including—

- (a) the announced allocations for high priority water allocations;
- (b) the date announced allocations are determined; and
- (c) the value of each parameter applied for calculating the announced allocation.

121 Water taken by water users

(1) The resource operations licence holder must record the total volume of water taken, by each water user for the Nerang Zone as follows—

- (a) the daily volumes taken via—
 - (i) the lower intake tower of Hinze Dam;
 - (ii) the upper intake tower of Hinze Dam; and
 - (iii) the intake tower of Little Nerang Dam

(2) The resource operations licence holder must record for each of the towers mentioned in subsection 1(a)—

- (a) the inlet level used for taking the daily volumes recorded under subsection 1; and
- (b) the reason for taking water via a particular intake tower and inlet level.

122 Seasonal water assignment of water allocations

The resource operations licence holder that approves a seasonal water assignment must record details of seasonal water assignment arrangements including—

- (a) the name of the assignee, volume and location of water that has been seasonally assigned by an assignor;
- (b) the name of the assignor, volume and location of the water that has been seasonally assigned to an assignee; and
- (c) the effective date of seasonal water assignments.

123 Critical water sharing arrangements

The resource operations licence holder must record details of critical water sharing arrangements including—

- (a) the commencement date(s) and effective period of critical water sharing arrangements; and
- (b) the effectiveness of critical water sharing arrangements.

Division 2 Impact of infrastructure operation on natural ecosystems

124 Water quality

The resource operations licence holder must monitor and record water quality data in relation to relevant infrastructure listed in Attachment 6.

125 Bank condition

- (1) The resource operations licence holder must inspect banks for evidence of collapse and erosion within the ponded areas and downstream of the relevant infrastructure listed in Attachment 6, following instances of—
 - (a) rapid water level changes;
 - (b) large flows through infrastructure; or
 - (c) other occasions when collapse or erosion of banks may be likely.
- (2) For subsection 1, downstream of the relevant infrastructure means the distance of influence of infrastructure operations.

126 Fish stranding

The resource operations licence holder must record and assess instances of fish stranding in watercourses and ponded areas associated with the infrastructure listed in Attachment 6, to determine if any instance of fish stranding is associated with the operation of that infrastructure.

Part 2 Reporting requirements

127 Reporting requirements

The resource operations licence holder must provide—

- (a) quarterly reports;
- (b) annual reports for the previous water year;
- (c) operational reports; and
- (d) emergency reports.

Division 1 Quarterly reporting

128 Quarterly report

- (1) The resource operations licence holder must submit a quarterly report to the chief executive within three months after the end of each quarter, of every water year.
- (2) The report must contain the following data—
 - (a) stream flow and infrastructure water levels—all records referred to in section 118A of this plan;
 - (b) the total volume of water for each quarter—
 - (i) taken for each zone;
 - (ii) entitled to be taken for each zone;
 - (c) water quality—all records referred to in section 124 of this plan;
 - (d) a summary of bank condition monitoring and incidences of slumping, undertaken in accordance with section 125 of this plan; and

- (e) the details and status of any programs implemented under section 14A of this plan.

Division 2 Annual reporting

129 Annual report

- (1) The resource operations licence holder must submit an annual report to the chief executive in accordance with the Water Monitoring Data Reporting Standards.
- (2) The annual report must include—
 - (a) water quantity monitoring results required under section 118A to section 123 of this plan;
 - (b) details of the impact of infrastructure operation on water quality as required under section 124 of this plan;
 - (c) a discussion paper about any issues that arose as a result of the implementation and application of the rules and requirements of this plan.

130 Water quantity monitoring—annual report

The resource operations licence holder must include in the annual report under section 129—

- (a) a summary of announced allocation determinations, including—
 - (i) an evaluation of the announced allocation procedures and outcomes; and
 - (ii) the date and value for the initial announced allocation and for each change made to an announced allocation;
- (b) instances where critical water supply arrangements have been implemented, including—
 - (i) an evaluation of the effectiveness of the arrangements and outcomes; and
 - (ii) the commencement date(s) and effective period of the arrangements;
- (c) releases from infrastructure—records referred to in section 119;
- (d) for the water year, the total annual volume of water taken by all water users, specified by zone, namely—
 - (i) the total annual volume of water taken;
 - (ii) the total annual volume of water entitled to be taken; and
 - (iii) the basis for determining the volume entitled to be taken;
- (e) details of seasonal water assignments, namely—
 - (i) the total number of seasonal water assignment arrangements; and
 - (ii) the total volume of water seasonally assigned;
- (f) all details of changes to infrastructure or the operation of the infrastructure that may impact on compliance with rules in this plan and;
- (g) details of any new monitoring devices used such as equipment to measure stream flow.

131 Impact of infrastructure operation on natural ecosystems—annual report

The resource operations licence holder must include in the annual report under section 129—

- (a) a summary of environmental considerations made by the resource operations licence holder in making operational and release decisions;
- (b) a summary of the environmental outcomes of the decision including any adverse environmental impacts;
- (c) a summary of bank condition and fish stranding monitoring and assessment, including—
 - (i) results of investigations of bank slumping or erosion identified in ponded areas or downstream of infrastructure;
 - (ii) results of investigations of fish stranding downstream of infrastructure; and
 - (iii) changes to the operation of infrastructure to reduce instances of bank slumping, erosion or fish stranding.
- (d) a discussion and assessment of the following water quality issues—
 - (i) thermal and chemical stratification in each water storage associated with infrastructure;
 - (ii) contribution of the water storage and its management to the quality of water released;
 - (iii) cumulative effect of successive water storages associated with infrastructure on water quality;
 - (iv) cyanobacteria population changes in response to stratification in each infrastructure storage; and
 - (v) any changes to the monitoring program as a result of evaluation of the data.

Division 3 Operational reporting

132 Operational report

The resource operations licence holder must—

- (a) notify the chief executive within one business day of becoming aware of any of the following operational incidents—
 - (i) a non-compliance by the resource operations licence holder with the rules in this plan; and
 - (ii) instances of fish stranding or bank slumping within the ponded areas or downstream of infrastructure listed in Attachment 6 or watercourses associated with the operation of the Nerang Water Supply Scheme;
- (b) provide to the chief executive a report which includes details of—
 - (i) the incident;
 - (ii) conditions under which the incident occurred; and
 - (iii) any responses or activities carried out as a result of the incident;
- (c) notify the chief executive upon commencement and cessation of critical water sharing arrangements; and
- (d) notify the chief executive on approval of any seasonal water assignment, including—
 - (i) the name and location of the assignees and assignors; and
 - (ii) the zone or zones where water is being seasonally assigned to and from;

- (e) notify the chief executive upon making a decision relating to an initial announced allocation and/or its recalculation;
- (f) transfer to the chief executive—
 - (i) details of any arrangements for addressing circumstances where the resource operations licence holder is unable to supply water allocations under subsection (e); and
 - (ii) relevant supporting information used in making a decision under subsection (e).

Division 4 Emergency reporting

133 Emergency report⁴

Where the resource operations licence holder cannot comply with a rule in this plan as a result of an emergency, the resource operations licence holder must—

- (a) notify the chief executive upon discovery of the emergency; and
- (b) provide to the chief executive a report that includes—
 - (i) details of the emergency;
 - (ii) conditions under which the emergency occurred;
 - (iii) any responses or activities carried out as a result of the emergency; and
 - (iv) any rules specified in this plan that the resource operations licence holder is either permanently or temporarily unable to comply with due to the emergency.

134 to 138 Section numbers not used

⁴ This does not preclude requirements for dam safety under the *Water Act 2000* and any other applicable legislation.

Chapter 9 Amendments to the resource operations plan

139 Scope of Chapter 9

This chapter states the types of amendments that can be made to this plan under the *Water Act 2000* that—

- (a) do not require public notification—Part 1; and
- (b) do require public notification—Part 2.

Part 1 Amendments not requiring public notification

140 Application of Part 1

This part states the amendments that may be made to this plan under section 106(b) of the *Water Act 2000*.

141 Amendment to implement an amendment to the *Water Act 2000*

An amendment that is necessary to implement an amendment to the *Water Act 2000* may be made to this plan.

142 Amendment necessary to implement an amendment to the Water Resource (Gold Coast) Plan 2006

An amendment that is necessary to implement an amendment to the Water Resource (Gold Coast) Plan 2006 made under section 57(b) of the *Water Act 2000* may be made to this plan.

143 Amendment to monitoring requirements

- (1) An amendment that provides for improved or more efficient monitoring for assessing Water Resource (Gold Coast) Plan 2006 outcomes may be made to this plan.
- (2) The amendments under subsection 1 may include, but are not limited to, the following—
 - (a) an increase in reporting requirements for compliance purposes;
 - (b) an increase in or addition to monitoring requirements, if further information is required; or
 - (c) a reduction or removal of state or resource operations licence holder monitoring requirements, if the chief executive is satisfied that no further information or benefit is to be gained from the continuation of the monitoring requirements.

144 Amendment to infrastructure details

An amendment may be made to the infrastructure details listed in Attachment 6 of this plan, provided the amendment is—

- (a) an amendment to facilitate the installation of a fish transfer system on any infrastructure; or

- (b) an amendment to facilitate the installation of, or modification to, multi-level inlet works on any infrastructure.

145 Amendment to critical water sharing arrangements

An amendment may be made to this plan to amend critical water sharing arrangements in section 78 of this plan.

145A Amendment to stream gauging station specification

An amendment may be made to this plan to amend the specification of stream gauging stations.

146 Other amendments to this plan

- (1) An amendment may be made to this plan if the chief executive is satisfied that the proposed amendment would not cause any significant detrimental impact on—
 - (a) existing water entitlement holders or;
 - (b) the availability of water for—
 - (i) ecological assets; or
 - (ii) natural ecosystems.
- (2) The amendments under subsection 1 may include, but are not limited to, the following—
 - (a) an amendment to the process for granting or amending a resource operations licence contained in Chapter 3 of this plan;
 - (b) an amendment to infrastructure details, operating and environmental management rules, dealings with water allocations, water sharing rules or seasonal water assignment rules.

Part 2 Amendments requiring public notification

147 Application of Part 2

This part states the amendments that may be made to this plan under section 105(5) of the *Water Act 2000*.

148 Amendments under the *Water Act 2000*

- (1) The chief executive may amend this plan under section 105(5) of the *Water Act 2000* to include additional requirements for water management.
- (2) Amendments that may occur under section 105(5) of the *Water Act 2000* include, but are not limited to—
 - (a) an addition or amendment to resource operations plan zones, including the amalgamation or subdivision of existing zones;
 - (b) providing for the operation and management of infrastructure for which a resource operations licence has been granted under the *Water Act 2000* to meet future water requirements, where the chief executive is satisfied that the

proposed infrastructure details, operating and environmental management rules, dealings with water allocations, water sharing rules or seasonal water assignment rules meet the objectives and outcomes of the Water Resource (Gold Coast) Plan 2006;

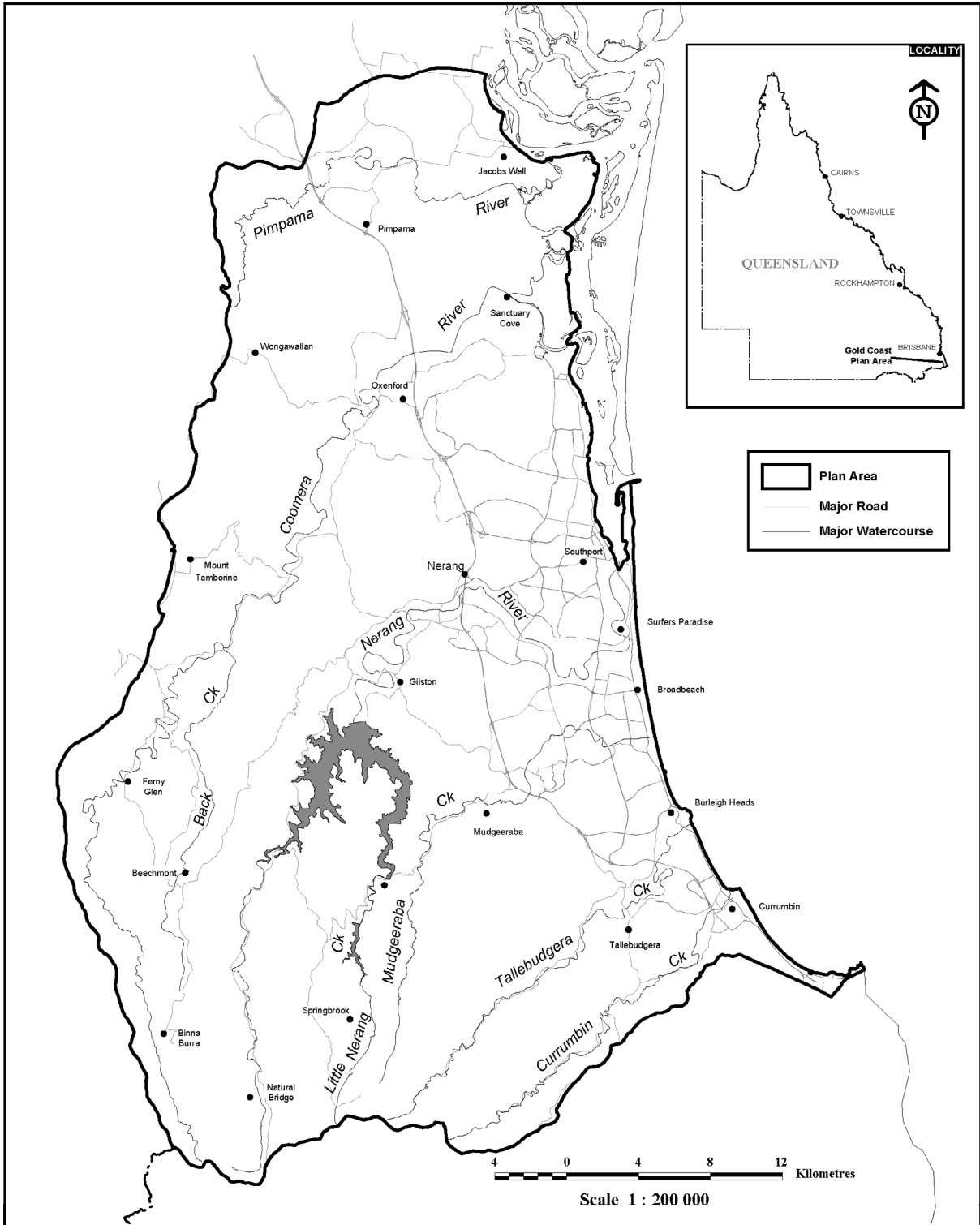
- (c) an addition or amendment to infrastructure details, operating and environmental management rules, dealings with water allocations, water sharing rules or seasonal water assignment rules for existing infrastructure where the chief executive is satisfied that the proposed amendment meets the objectives and outcomes of the Water Resource (Gold Coast) Plan 2006; or
- (d) an amendment to provide for granting unallocated water from the strategic reserve in accordance with section 24 of the Water Resource (Gold Coast) Plan 2006.

Attachment 1 Glossary

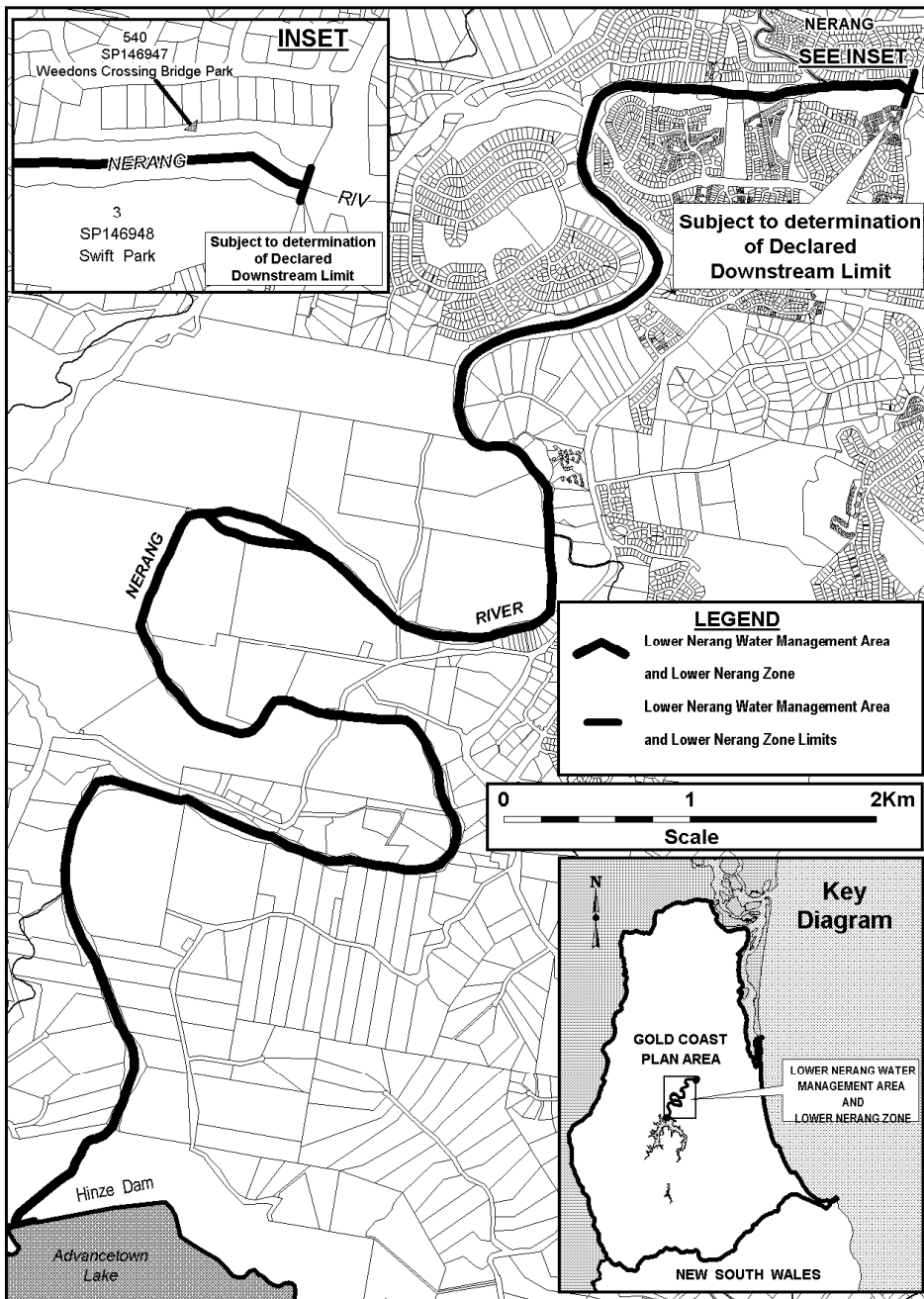
Term	Definition
AHD	The Australian Height Datum, which references a level or height to a standard base level.
Announced allocation	For a water allocation managed under a resource operations licence, means a number, expressed as a percentage, which is used to determine the maximum volume of water that may be taken in a water year under the authority of a water allocation.
Assignee	The person or entity to whom an interest or right to water is being transferred (e.g. seasonally assigned).
Assignor	The person or entity that transfers an interest or right in water to an assignee (e.g. a seasonal assignment).
Critical water sharing arrangements	For the purposes of this plan, critical water sharing arrangements has the same meaning as critical water supply strategy in the Water Resource (Gold Coast) Plan 2006.
Device used for release	The device used to release water from infrastructure. Devices include, but are not limited to, outlet valves, fish locks, or fish ways.
EL	Elevation.
Existing water authorisation	A water licence, interim water allocation or other authority to take water that has effect immediately prior to the commencement of this plan.
Fish stranding	Fish stranding means when fish are stranded or left out of water on the bed or banks of a watercourse, on infrastructure such as spillways and causeways, or left isolated in small or shallow pools, from which they cannot return to deeper water. Fish stranding also applies to other aquatic species.
Headwater	The watercourse immediately upstream of a dam, weir, or other hydraulic structure.
Infrastructure	A dam, weir or other water storage and any associated works for taking or interfering with water in a watercourse, lake or spring.
Inlet	Infrastructure comprised of an entrance channel, intake structure, and gate or valve which allow for water to be taken from the ponded area of a storage, dam or weir.
Location	For a water allocation, means the zone from which water under the water allocation can be taken. For a water licence, means the section of the watercourse, lake or spring abutting or contained by the land described on the water licence at which water may be taken.
Megalitre (ML)	One million litres.
Minimum control level	The level or elevation of water within the impoundment area of a storage, dam or weir below which water cannot be released or taken from the infrastructure under any operating conditions.

Term	Definition
Minimum operating level	The level or elevation of water within the impounded area of a storage, dam, or weir below which water cannot be released or taken from the infrastructure under normal operating conditions.
Minimum operating volume	The specified minimum volume of water within the impounded area of a storage, dam, or weir below which water cannot be released or taken from the infrastructure under normal operating conditions.
Outlet	An arrangement on a storage, dam or weir that allows stored water to be released.
Ponded area	Area of inundation at full supply level of a dam or weir.
Resource operations plan zone	Resource operations plan zones define the location of all water allocations within the plan area, and provide geographic limits for trading that ensure water allocation security objectives and environmental flow objectives are achieved.
Water allocation group	A grouping of water allocations for taking unsupplemented water, which have the same Water Allocation Security Objectives (WASO). A class A water allocation group is a water allocation converted from an existing area based water authorisation. A class B water allocation group is a water allocation converted from an existing water authorisation that does not state an area.
Water allocation security objective	Objectives that are expressed as performance indicators in Schedule 6 of the Water Resource (Gold Coast) Plan 2006.
Water management area	A water management area is an area containing water allocations not managed under a resource operations licence, for which there is a common set of management rules.
Water year	The period from 1 July to 30 June.

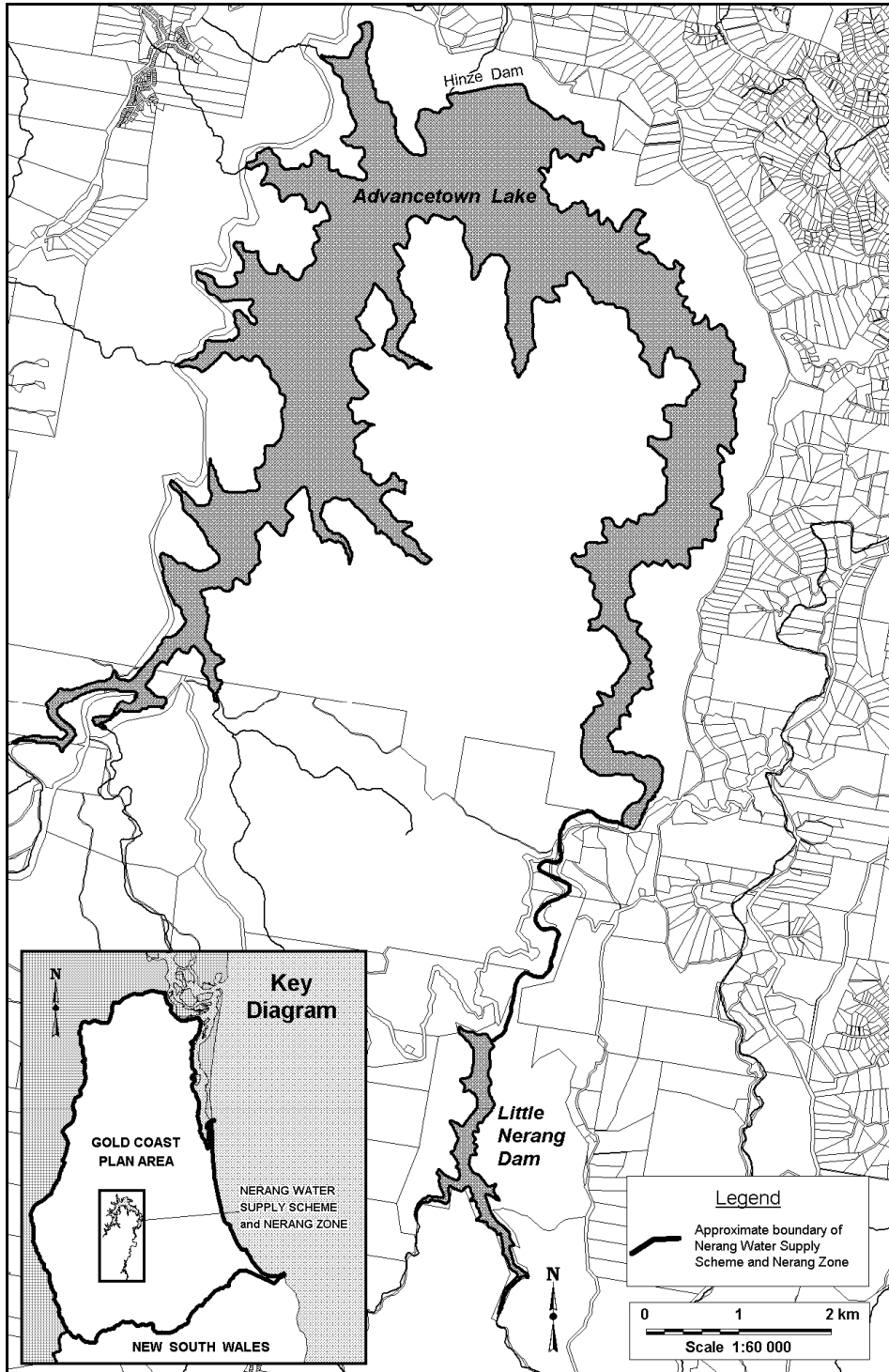
Attachment 2 Plan area



Attachment 3 Lower Nerang Water Management Area and Lower Nerang Zone



Attachment 4 Nerang Water Supply Scheme and Nerang Zone



Attachment 5 Links between this plan and the outcomes of the Water Resource (Gold Coast) Plan 2006

General surface water outcomes of the Water Resource (Gold Coast) Plan 2006 (Section 10)	Resource operations plan rules
10 Each of the following is a general outcome for surface water in the plan area—	
10(a) to provide for future water requirements, including the opportunity for additional water to be taken from the plan area	<ul style="list-style-type: none"> • dealing with unallocated water • granting of a water allocation from the strategic reserve
10(b) to provide for the continued use of all existing water entitlements and other authorisations	<ul style="list-style-type: none"> • granting, amending and converting authorisations • dealing with water licence applications • operating and environmental management rules • water sharing rules
10(c) to protect the probability of being able to obtain water under a water allocation	<ul style="list-style-type: none"> • granting, amending and converting authorisations • dealing with water licence applications • operating and environmental management rules • water sharing rules • rules for unsupplemented water allocations
10(d) to encourage the efficient use of water	<ul style="list-style-type: none"> • operating and environmental management rules • water sharing rules • water allocation change rules • monitoring and reporting requirements
10(e) to protect essential water supplies when water availability is low	<ul style="list-style-type: none"> • operating and environmental management rules • water sharing rules • seasonal water assignment rules • rules for unsupplemented water allocations
10(f) to support natural ecosystems by minimising changes to natural flow regimes	<ul style="list-style-type: none"> • operating and environmental management rules • water sharing rules • water allocation change rules • seasonal water assignment rules • monitoring and reporting requirements
10(g) to protect, or minimise the impact of the taking of water on, ecological assets and ecosystem structures and processes	<ul style="list-style-type: none"> • operating and environmental management rules • monitoring and reporting requirements

General surface water outcomes of the Water Resource (Gold Coast) Plan 2006 (Section 10)	Resource operations plan rules
10(h) to allow water-related cultural use of the plan area by the traditional owners of the area	<ul style="list-style-type: none"> • operating and environmental management rules • monitoring and reporting requirements
10(i) to provide consistency between this plan and the SEQ regional plan	<ul style="list-style-type: none"> • dealing with unallocated water • operating and environmental management rules • water sharing rules
Particular ecological outcomes of the Water Resource (Gold Coast) Plan 2006 (Section 11)	Resource operations plan rules
11 Particular ecological outcomes for water in the part of the plan area stated for the outcome are as follows—	
11(2) Also, an ecological outcome for water in the plan area is to minimise changes, as far as practicable, to the volume and seasonality of freshwater flows into Moreton Bay and the Broadwater.	<ul style="list-style-type: none"> • operating and environmental management rules • monitoring and reporting requirements

Attachment 6 Nerang Water Supply Scheme

Table 1 Hinze Dam – Nerang River – AMTD 36.4 km

Description of water infrastructure	
Description	A 78.4 metre (m) high earth-rock fill embankment of 750 m in length with an impervious clay core. Saddle Dam—A 23.4 m high earth-rock fill embankment of 940 metres length with an impervious clay core.
Full supply level	EL 94.5 m AHD
Minimum operating level	45.6 m AHD
Minimum control level	43 m AHD
Storage capacity	
Full supply volume	310 700 ML
Minimum operating volume	2180 ML
Storage curves	Derived by SKM, Based on ‘Stage-Storage Curve from Hinze Dam–Little Nerang Dam Consolidated Report on Yield Reassessment Studies No 2’ (Cardno MBK, 2004).
Spillway arrangement	
Description of works	An uncontrolled ogee slotted spillway on the left bank at AMTD 36.4 km on the Nerang River. Reference: Hinze Dam Alliance, Preliminary Design Report, HDA-RP/000218, Nov 2007
Spillway level	EL 94.5 m (lower slot) EL 100.3 m (upper crest)
Spillway width	Approximately 75 m wide
Spillway length	Approximately 260 m
Spillway curve	Hinze Dam Alliance, Preliminary Design Report, HDA-RP/000218, Nov 2007
Discharge characteristics	Peak outflow 4060 m ³ /s at PMF EL 108.15 m AHD

Outlet works	
a) Lower intake tower	<p>Description: A 76 m high dry well reinforced concrete tower housing eleven screened 1500 mm diameter inlet pipes at EL 43.316 m, 48.316 m, 53.316 m, 58.316 m, 63.316 m, 68.316 m, 73.316 m, 78.316 m, 83.316 m, 88.316 m and 93.316 m AHD.</p> <p>The pipes are arranged radially connecting to a central vertical riser pipe within the intake tower, which connects to a 1440 mm diameter outlet pipe.</p> <p>Reference: SKM, URS, Thiess, Gold Coast City Council, drawing no. LOW-003.</p> <p>Location: The lower intake tower is located in Hinze Dam adjacent the main embankment.</p>
b) Lower intake tower Connection to Molendinar Water Treatment Plant	<p>Description of outlet works: The 1440 mm diameter outlet pipe from the lower intake tower transports raw water to the pump station. The pump station houses three pumps.</p> <p>Provisions for selective release: Flow is regulated at the intake tower inlets by electrically actuated butterfly valves. The rate of pumped flow is controlled by the pump/s in operation.</p> <p>Maximum outlet capacity:</p> <p>Pumped flow = 240 ML/day = 2778 L/s</p> <p>Gravity flow = 120 ML/day = 1389 L/s</p> <p>Minimum operating Level: EL 45.6 m AHD.</p>
c) Upper intake tower	<p>Description: A 58 m high dry well reinforced concrete tower housing nine 900 mm diameter inlet pipes at EL 92.548 m, 87.348 m, 82.148 m, 76.934 m, 71.713 m, 66.536 m, 61.337 m 58.842 m and 56.340 m AHD. The pipes are arranged radially connecting to a central vertical riser pipe within the intake tower, which connects to a 806 mm diameter outlet pipe.</p> <p>Reference: SKM, URS, Thiess, Gold Coast City Council, drawing no. UOW-003.</p> <p>Location: The upper intake tower is located 4.5 km upstream of the main embankment of Hinze Dam on the Little Nerang Creek arm of the impoundment.</p>
d) Upper intake tower Connection to Mudgeeraba Water Treatment Plant (WTP)	<p>Description of outlet works: Three electric pumps are located in the dry well of the upper intake tower.</p> <p>Provisions for selective release: Flow is regulated on the intake tower inlets by electrically actuated butterfly valves. The rate of pumped flow is controlled by the pump/s in operation.</p> <p>Maximum outlet capacity: Pumped flow from the upper intake tower to the break of head tank = 87.4 ML/day = 1012 L/s. Gravity flow from the break of head tank to Mudgeeraba WTP = 74.0 ML/day = 856 L/s.</p> <p>Minimum operating level: EL 58.5 m AHD</p>

Outlet works	
e) Emergency outlet	<p>Description of outlet works: An 800 mm diameter scour outlet pipe is connected to the lowest inlet.</p> <p>Provisions for selective release: Flow is regulated by a 600 mm diameter fixed cone regulating valve.</p> <p>Minimum control level: EL 43 m AHD.</p> <p>Emergency outlet gate: 3.4 m by 3.4 m at EL 75 m AHD.</p>

Table 2 Little Nerang Dam – Little Nerang Creek – AMTD 16.1 km

Description of water infrastructure	
Description	A 44.6 m high mass concrete gravity dam structure located at AMTD 16.1 km on Little Nerang Creek. Overall crest length between abutments of 201 m with 22 concrete segments—designated monoliths 1 to 22 respectively from the right to the left abutment. A central gated overflow section, 36.576 m wide at crest, with a ski-jump type flip bucket having a 4.572 m radius. The central overflow section has two 16.46 m x 3.58 m hydraulically operated drum gates—which are currently locked open*. A concrete parapet wall extends approx 1.2 m above the deck level. Reference: Gold Coast City Council, drawing no. 60935A.
Full supply level	Full supply level: EL 168 m AHD (gates locked open)* Full supply level: EL 171.6 m AHD (gates operational)*
Minimum operating level	139.3 m AHD.
Storage capacity	
Full supply volume	Total storage capacity: 6670 ML (gates locked open)* Total storage capacity: 8400 ML (gates operational)*
Minimum operating volume	203 ML
Storage curves	Reference: Department of Local Government plan no. 13036.
Spillway arrangement	
Description of works	The embankment has a central gated overflow section, 36.576 m wide at crest, with a ski-jump type flip bucket having a 4.572 m radius. The central overflow section has two 16.46 m x 3.58 m hydraulically operated drum gates, which are currently locked open*.
Spillway level	Crest level EL 168 m AHD with gates locked open*
Spillway width	36.576 m
Discharge characteristics	Reference: GHD report for Gold Coast Water 2006. Report for Little Nerang Dam Cost Benefit Analysis Stage 1, April 2006.

*Pending approval for safe operation by the chief executive under Chapter 3, part 6 of the *Water Act 2000*, the Little Nerang drum gates are not to be operated and are to remain in a locked open position.

Outlet works	
a) Intake tower	<p>Description: A reinforced concrete intake tower housing five screened 450 mm diameter inlet pipes at EL 166.95 m, 161.39 m, 155.15 m, 148.90 m and 142.65 m AHD. The pipes are arranged radially connecting to a central vertical riser pipe within the intake tower, which connects to an 850 mm diameter outlet pipe</p> <p>Location: The intake tower is located in monolith 11, immediately to the right of the spillway.</p>
b) Connection to Mudgeeraba Water Treatment Plant (WTP)	<p>Description of outlet works: An 850 mm diameter gravity raw water main, 7.845 km long, transports raw water to Mudgeeraba WTP.</p> <p>Provisions for selective release: Flow is regulated on the inlets by hand operated sluice valves. Flow is also regulated at the inlet to Mudgeeraba WTP by an electrically actuated butterfly valve.</p> <p>Maximum Outlet Capacity: 76 ML/day = 880 L/s.</p> <p>Minimum Control Level: EL 139.3 m AHD.</p>
c) Outlet to Little Nerang Creek	<p>Description of outlet works: A 150 mm diameter offtake from the 850 mm diameter outlet pipe.</p> <p>Provisions for selective release: Flow is regulated by a sluice valve on the 150 mm diameter offtake.</p> <p>Maximum Outlet Capacity: 4.06 ML/day = 47 L/s.</p> <p>Minimum Control Level: EL 139.3 m AHD.</p>
d) Emergency outlet	<p>Description of outlet works: A 600 mm diameter outlet, located in monolith 16, in the centre of the spillway.</p> <p>Provisions for selective release: Flow is regulated by dual 600 mm diameter sluice valve.</p> <p>Maximum outlet capacity: 5.1 m³/s at EL 168 m (FSL).</p> <p>Minimum control level: EL 131.9 m AHD.</p>

Table 3 **Announced allocation parameters**

Term	Details
AA_{HP} High priority announced allocation	The percentage of the nominal volumes for high priority water allocations that may be taken for the current water year.
HPA High priority water allocations (ML)	The total nominal volume of high priority water allocations in the Nerang Water Supply Scheme.
UV Useable volume (ML)	<p>The useable volume is determined by summing the useable volume of each of the storages included in the resource assessment.</p> <p>$UV = \text{sum (UV storage)}$</p> <p>$UV_{\text{storage}} = (CV - MOV)$</p> <p>$UV_{\text{storage}} = 0$ if $(CV - MOV)$ is less than 0</p> <p>Where:</p> <p>UV is the useable volume of each storage.</p> <p>CV is the current volume of the storage.</p> <p>MOV is the minimum operating volume of the storage.</p> <p>Storages included in the resource assessment are Little Nerang Dam and Hinze Dam.</p>
DIV_{HP} High priority diversion (ML)	The volume of high priority water diverted by high priority water allocation holders in the current water year up to the time of the assessment of the announced allocation.

Table 4 Stream flow and water level data requirements: Locations where continuous time series infrastructure water level and stream flow data are required

Location	Continuous time series infrastructure water level data	Continuous time series stream flow data
Hinze Dam inflow		✓
Hinze Dam headwater	✓	
Hinze Dam tailwater	✓	✓
Little Nerang Dam inflow		✓
Little Nerang Dam headwater	✓	
Little Nerang Dam tailwater	✓	✓

Attachment 9 Schedule of supplemented water allocations granted from strategic reserve

Water allocation number	Family name/ company name	Given names	Tenancy type	Share of water allocation	Tenancy comments	Location	Purpose	Other conditions	Nominal volume (ML)	Priority
31	SEQ Water Grid Manager		Sole Proprietor	1		Nerang Zone	Any	Nil	7700	High

Amendment History

The Gold Coast Resource Operations Plan 2009 was approved by the Governor in Council on 3 December 2009 and commenced on 7 December 2009. The resource operations plan has been amended as follows:

Revision 1 (November 2010) under section 105(5) of the <i>Water Act 2000</i>	
Amended, added and deleted sections:	Amendments
Chapter 1 Preliminary	
<ul style="list-style-type: none"> • section 2 (1) 	Amended to include date of commencement of plan
<ul style="list-style-type: none"> • section 2 (2) 	Amended to include date of commencement of amendment
<ul style="list-style-type: none"> • section 14 	Deleted and replaced by section 14A
<ul style="list-style-type: none"> • section 14A 	Added to replace section 14 and refers to commencement of this section rather than commencement of the plan
<ul style="list-style-type: none"> • section 15 (2) (b) 	Amended to refer to section 14A rather than section 14
Chapter 3 Granting, amending and converting authorisations	
<ul style="list-style-type: none"> • sections 35, 37, 38, 39, 40,41,42, 43 	Deleted as they are now obsolete
<ul style="list-style-type: none"> • part 6 	Added to enable the grant of a water allocation from the strategic reserve as per attachment 9
Chapter 5 Nerang Water Supply Scheme	
<ul style="list-style-type: none"> • section 72 	Deleted and replaced by section 72A
<ul style="list-style-type: none"> • section 72A 	Added to replace section 72 and refers to releases and supply of water for water allocations relevant to the augmented infrastructure
<ul style="list-style-type: none"> • section 76 (1) (a),(b) 	Amended to include new volumetric details of Hinze Dam
<ul style="list-style-type: none"> • section 78 (1) 	Amended to include new volumetric details of Hinze Dam
<ul style="list-style-type: none"> • section 81 (1) (b) 	Amended to more clearly specify the types of subdivision that are prohibited
<ul style="list-style-type: none"> • section 81 (2) 	Amended to more clearly specify the types of amalgamation that are prohibited
Chapter 6 Rules for unsupplemented water allocations	
<ul style="list-style-type: none"> • section 92 	Deleted as it is now obsolete

Chapter 8 Resource operations licence holder monitoring and reporting	
• section 118	Deleted and replaced by section 118A
• section 118A	Added to replace section 118 and refers to commencement of this section rather than commencement of the plan
• section 128 (2) (a)	Amended to refer to section 118A rather than section 118
• section 128 (2) (e)	Amended to refer to section 14A rather than section 14
Chapter 9 Amendments to the resource operations plan	
• section 145A	Added to include amending specification of a stream gauging station
Attachment 1 Glossary	
• Attachment 1	Minimum control level—definition was added to differentiate this level from the minimum operating level
Attachment 2 Plan Area	
• Attachment 2	Amended to include the correct boundary of the augmented infrastructure
Attachment 3 Lower Nerang Water Management Area and Lower Nerang Zone	
• Attachment 3	Amended to include the correct boundary of the augmented infrastructure
Attachment 4 Nerang Water Supply Scheme and Nerang Zone	
• Attachment 4	Amended to include the correct boundary of the augmented infrastructure
Attachment 5 Links between this plan and the outcomes of the Water Resource (Gold Coast) Plan 2006	
• Attachment 5	Amended to include details of how the plan provides for future water requirements through the granting of the strategic reserve
Attachment 6 Nerang Water Supply Scheme	
• Attachment 6, Table 1	Amended to include details of the augmented infrastructure
Attachment 7 Schedule of supplemented water allocations	
• Attachment 7	Deleted as it is now obsolete

Attachment 8 Schedule of unsupplemented water allocations	
<ul style="list-style-type: none">Attachment 8	Deleted as it is now obsolete
Attachment 9 Schedule of supplemented water allocations granted from strategic reserve	
<ul style="list-style-type: none">Attachment 9	Added to show supplemented water allocations granted from strategic reserve
Amendment History Revision 1 (November 2010) under section 105(5) of the <i>Water Act 2000</i>	
<ul style="list-style-type: none">Amendment history	Added to show changes to the Gold Coast Resource Operations Plan 2009