Queensland

Water Resource (Moreton) Plan 2007

Explanatory Notes for SL 2007 No. 31

made under the

Water Act 2000

General Outline

Title

Water Resource (Moreton) Plan 2007

Authorising Law

Sections 38 to 50 of the *Water Act 2000*

Policy objectives of the legislation

The objective of the water resource plan (this plan) is to provide a framework for the allocation and sustainable management of water. This includes surface water, groundwater (other than groundwater to which the *Water Resource (Great Artesian Basin) Plan 2006* applies) and overland flow water (other than water in springs connected to artesian water or subartesian water connected to artesian water), in the plan area. The water resource plan strives to sustainably manage this water whilst meeting future water requirements, including the

protection of natural ecosystems and security of supply to water users. This objective is required by the *Water Act 2000* (the Act). The plan area includes the catchments of the Brisbane, Pine, Caboolture rivers and Cabbage Tree Creek, and a group of creeks described as the Pumicestone creeks.

This plan provides for the allocation and sustainable management of surface water, groundwater and overland flow water by—

- defining the availability of water in the plan area
- providing a framework for sustainably managing water and the taking of water
- identifying priorities and mechanisms for dealing with future water requirements
- providing a framework for reversing, where practicable, degradation that has occurred in natural ecosystems
- to provide a framework for establishing water allocations to take surface water
- to provide a framework for the granting and amending of water entitlements for groundwater and overland flow water

Legislation Consistent with Policy Objectives of Authorising Law

The subordinate legislation is consistent with the policy objectives of the Act.

Estimated Cost for Government

Development of this plan and the Resource Operations Plan for the plan area (ROP) is fully funded from current budget estimates and it is not anticipated that any additional funds will be sought. Accordingly, this plan should not alter the present cost to government of administering the Act.

Consistency with fundamental legislative principles

The subordinate legislation is consistent with fundamental legislative principles.

Consultation

A number of panels were formed to give advice on the preparation of the draft plan.

The then minister for the Department of Natural Resources and Mines (the minister) formed a Community Reference Panel to give advice on the preparation of the draft plan. The panel consisted of sixteen members representing sectoral and geographic interests in the plan area including agriculture business and commerce, commercial and recreational fishing, conservation, local government, traditional owners, water services providers, regional development and the broader community.

The panel members met four times throughout the development of the draft plan and provided advice and guidance on a wide range of issues. These included advising the minister on issues raised by the community, and on water management options, and developing principles representing the aspirations of the group for management of the water resources of the plan area.

A Technical Advisory Panel was formed to undertake an environmental assessment, the panel's findings and methodology was peer reviewed by a Scientific Expert Panel.

Consultation with the Indigenous community was undertaken primarily through the Community Reference Panel, on which the Indigenous community was represented, and through the South East Queensland Traditional Owners Land and Sea Management Alliance.

Five newsletters were published on the department's website between May 2005 and July 2006, outlining the planning process and how members of the public could contribute to that process, as well as informing readers of milestones in this plan's preparation.

A number of public notices and media releases were also published, including public notices calling for submissions on the notice of

intention to prepare a draft plan, the draft plan itself (upon its release), and the intention to prepare a draft Resource Operations Plan for the Moreton.

All properly-made submissions received on the draft plan were considered by the Minister in its finalisation.

The outcomes of community consultation are outlined in the separate document Moreton Water Resource Plan Consultation Report.

Regulatory Impact Statement

Section 58 of the Act states that a regulatory impact statement is not required for the approval of a water resource plan.

Notes on Provisions

Part 1 Preliminary

Short title

Clause 1 sets out the short title to the subordinate legislation.

Purposes of this plan

Clause 2 states the purposes of this plan. These reflect the requirements of section 38 of the Act.

Definitions

Clause 3 specifies that certain terms are defined in the dictionary in schedule 15.

Part 2 Plan area and water to which plan applies

Plan area

Clause 4 provides that the plan area is shown in schedule 1. The plan area includes the catchments of the Brisbane, Pine, Caboolture rivers and Cabbage Tree Creek, and a group of creeks described as the Pumicestone creeks.

Groundwater management areas, implementation areas and groundwater units

Clause 5 provides that for each part of the plan area that is within a groundwater management area is shown in schedule 2. For each part of the plan area that is within the Lockyer Valley groundwater management area is shown in schedule 3. Groundwater management areas, implementation areas and groundwater units are part of the plan area that require specific management. More information on the groundwater management areas, implementation areas and groundwater units is provided in discussion of part 6 of this plan.

Subcatchment areas

Clause 6 provides that a map and names of subcatchment areas are shown in schedules 4 and 5 respectively. The use of subcatchment areas provides for more effective management and planning of water allocations than a whole-of-plan-area approach by focusing on the ecological and consumptive needs of smaller areas within the overall plan area. This approach also has the benefit of more effective monitoring of the impacts that local changes have on achieving plan objectives.

Information about areas

Clause 7 explains that the exact locations of the plan area, groundwater management areas, implementation areas, and subcatchment area boundaries are held in digital electronic form by the department and can be inspected in detail. They are held at departmental offices.

Nodes

Clause 8 defines nodes mentioned in this plan. Nodes are specific locations on a watercourse within the plan area, where stream flow characteristics are described. In addition, modelled stream flows are estimated and reported to test consistency with environmental flow objectives. Nodes are identified by a letter of the alphabet and their locations are shown on the map in schedule 1 and described in schedule 6.

Water to which plan applies

Clause 9 states that this plan applies to surface water, groundwater and overland flow water across the entire plan area. Dealing with surface water, groundwater and overland flow water provides for a more comprehensive and sustainable approach to water management. However, this plan does not apply to groundwater to which the *Water Resource (Great Artesian Basin) Plan 2006* applies nor does it propose to manage groundwater in areas outside of the groundwater management areas in schedule 2 of this plan. Despite this, monitoring and reporting requirements will ensure that an amendment to this plan can be initiated to regulate groundwater outside of the current groundwater management areas where it is determined that the plans outcomes are at risk (see clauses 92 and 97).

Surface water is water in a watercourse or lake, water in springs not connected to artesian water or subartesian water connected to artesian water.

Groundwater means either artesian or subartesian. Subartesian water is water in an aquifer which if tapped by a bore, would not flow naturally to the surface. Artesian water is water in an aquifer that would flow naturally to the surface when tapped by a bore.

Overland flow is water that runs off land following rainfall, either before it enters a watercourse or after it discharges as floodwater from a watercourse or lake.

Part 3 Outcomes for sustainable management of water

Part 3 provides the outcomes, including the ecological outcomes, which this plan seeks to balance through implementing particular management strategies. The inclusion of these outcomes meets the requirements of section 46(1)(e) of the Act.

Outcomes for water in the plan area

Clause 10 establishes that the outcomes in clauses 11-12 have been derived in consideration of the current state of water resources in the plan area and that allocation and management methods must seek a balance between those outcomes.

General outcomes

Clause 11 states the general outcomes for the allocation and sustainable management of water in the plan area. These outcomes are aimed at protecting aquatic ecosystems, protecting existing water user access and providing for future water requirements.

Ecological outcomes

Clause 12 states the particular ecological outcomes which this plan seeks to achieve in parts of the plan area.

Parts of the plan area were identified through independent scientific assessments and consultation as areas of ecological significance requiring specific ecological outcomes. The outcomes refer to the Stanley River and tributaries, upstream of the impounded area of Woodford Weir, Boondall Wetlands, estuarine reaches and Moreton Bay and Pumicestone Channel.

Part 4 Performance indicators and objectives

A performance indicator is defined in the Act to mean a measure that can be calculated and is stated in this plan to assess the impact of an allocation and management decision or proposal on water entitlements and natural ecosystems.

There are two sets of plan objectives: environmental flow objectives and water allocation security objectives. An objective represents a statistic produced by the department's Integrated Quantity and Quality Model (IQQM—see clause 21) that meets a performance indicator.

Future activities that could potentially affect the allocation and management of water in the plan area—for example, new water resource development, water trades, proposed changes to operational rules, or strategies implemented in a ROP—would only be approved if they were consistent with the objectives defined in part 4 of this plan. This requirement is separate to any other approvals or assessments that may be required—for example, approvals for works under the *Integrated Planning Act 1997* or environmental impact assessments required by other legislation.

The impact on and consistency with the plan's objectives are assessed using the department's IQQM computer program or another approved method. This program simulates stream flows in the plan area over the period 1889 to 2000. Operational rules can be simulated through this period to ensure that objectives are not compromised.

Division 1 Preliminary

Application of pt 4

Clause 13 states that this part applies to surface water only. Groundwater is dealt with separately in part 6 of this plan and overland flow is dealt with separately in part 7 of this plan.

Division 2 Environmental flow objectives

Environmental flow objectives aim to protect the health of natural ecosystems when future decisions are made under this plan. The objectives attempt to minimise change to the flow regime and are defined at nodes.

Performance indicators for environmental flow objectives

Clause 14 states the performance indicators for the environmental flow objectives. Pre-development characteristics are described through a combination of these performance indicators and the objectives stated in schedule 7. These indicators allow for environmental flow targets to be set to address the environmental impacts that may arise from changes to the flow regime.

The specified indicators are important key flow characteristics and are based on technical advice received during plan development. The indicators relate to periods of no flow, low flow and medium to high flow. The variability and seasonality of flow regimes within the plan area are unique to each river system and are often critical for many ecological processes.

No one performance indicator or objective, achieved in isolation, is likely to maintain stream condition. Rather, several flow characteristics must be supported if the plan's ecological outcomes and objectives are to be achieved.

Environmental flow objectives

Clause 15 states that the environmental flow objectives are stated in schedule 7.

The objectives have been set at a level to address and achieve the general and ecological outcomes as set out in part 3. The objectives have been developed in consideration of future impacts that may occur in various parts of the plan area and balance environmental and consumptive requirements.

The objectives are a numerical target or level of performance to be achieved, and consist of a combination of mandatory and desired objectives. The mandatory objectives ensure that the outcomes are

maintained, while the desired objectives, if achieved, will enhance the ecological outcomes.

Any future decisions about the allocation and management of water in the plan area must comply with the environmental flow objectives. This would be tested by the IQQM or another approved method (see clause 21). The objectives include a range of no flow, low flow, and medium to high flow objectives.

Division 3 Water allocation security objectives

Water allocation security objectives aim to ensure that future decisions about the allocation and management of water made under this plan will not affect the probability of groups of water users being able to obtain water under their water allocations.

Performance indicators for water allocation security objectives

Clause 16 states the performance indicators that define the water allocation security objectives according to whether the indicator is for supplemented or unsupplemented water. See the discussion regarding schedule 8 for information on water sharing indexes.

The objectives define the minimum long-term performance of a group of water allocations that will be maintained for the life of this plan. Supplemented water is water supplied under an interim resource operations licence (IROL), resource operations licence (ROL) or other authority to operate water infrastructure such as a dam or weir. Unsupplemented water is surface water that is not supplemented water.

Water allocation security objectives

Clause 17 states that the water allocation security objectives for this plan are stated in schedule 8. Water allocation security objectives for supplemented and unsupplemented water are listed in parts 1 and 2 of the schedule respectively.

Water allocation security objectives do not represent a prediction or guarantee of future performance of water allocations in any particular year. The objectives represent how an allocation would have been

expected to perform using historical data, assuming full development of the plan's strategic water reserve and other unallocated water, as well as full use of the plan area's water entitlements.

Actual performance under the implemented plan will depend on prevailing climatic factors, water demand distribution patterns and water users' choice in using their entitlements. In other words, the way an entitlement might have performed during the simulation period is not necessarily indicative of how it will perform in the future.

Water allocation security objectives will take effect when the water resource plan is implemented under a resource operations plan (ROP). They will apply only to water entitlements that convert to tradable water allocations.

The objectives for supplemented water are specified in schedule 8 part 1. The objectives for unsupplemented water are based on subcatchment area and the type of authorisations, known as water allocation groups (e.g. unsupplemented irrigation, water harvesting, town water supply or other authorisations).

Part 5 Strategies for achieving outcomes (surface water)

Division 1 Preliminary

Strategies for surface water

Clause 18 states that the strategies in part 5 apply to surface water. Groundwater is dealt with separately in part 6 of this plan and overland flow water is dealt with separately in part 7 of this plan.

Division 2 Decisions made under this plan

Application of division 2

Clause 19 outlines that division 2 applies to decisions about water allocation or management in the plan area, with two exceptions—

decisions about reinstating or replacing an expired water licence and decisions to grant a water entitlement to a local government or a government agency for supply under operations or water infrastructure that were in existence on the commencement of this plan. These situations are not covered in this plan because they are dealt with under the provisions of the Act.

Decisions consistent with objectives

Clause 20 requires all decisions made about the allocation or management of water in the plan area, other than decisions about a water permit, to be consistent with the environmental flow and water allocation security objectives detailed in schedules 7 and 8 respectively. This provides greater certainty and security to allocation holders, ensures environmental flows are maintained and provides consistent and transparent considerations for decision-making.

Decisions about water permits are excluded from this requirement because the water taken during short permit periods is deemed not to affect the objectives, which are derived from long-term historical data. However, separate consideration of the impacts on natural ecosystems and existing water entitlements and authorisations to take or interfere with water is required in granting these permits under section 239 of the Act.

Assessing impact of decisions

Clause 21 states that the department's IQQM computer program is the method used to assess consistency with the environmental flow and water allocation security objectives.

The IQQM simulates all the major surface water processes that occur within a large catchment including water extractions, instream losses and the climatic and seasonal variability in surface water flow. The model was calibrated and validated using historical data from 1 July 1889 to 30 June 2000 (111 years). As such, the testing of compliance with the objectives is done by using the simulation data for that period.

The clause also provides that if it is not practicable to use the IQQM, the chief executive may approve another method if the chief executive is satisfied that it is at least as accurate as the IQQM in assessing consistency with this plan's objectives.

Decisions not to increase amount of water taken

Clause 22 states that the chief executive must not make a decision that would increase the average volume of water available to be taken in the plan area, except in relation to a decision about unallocated water made under clause 25; a decision about a water permit (see clause 20); or a decision about water entitlements managed under the system operating plan applying to the plan area, but only to the extent that the decision does not impact on the objectives, for either environmental flow or water allocation security objectives, for water allocations not managed under the system operating plan.

The clause effectively caps the amount of water to be taken from the plan area at the amount identified by this plan. This is because the allocation framework has been developed in recognition of full utilisation of existing water entitlements and provision of additional allocation to meet future water needs. Any provision of water outside this framework could potentially affect the strategic reserve, existing water users or environmental flows.

Subclause 3 addresses applications for authorisations to take water that were made, but not dealt with, before the commencement of this plan. A moratorium on applications for water entitlements was announced on 24 March 2005 under section 26 of the Act. The purpose of the moratorium was to maintain the level of water being taken or interfered with at its then-current level while this plan was being developed. The moratorium remained in effect until commencement of this plan.

The moratorium requirements have prevented the department from dealing with surface water and groundwater entitlement applications that were received before the announcement of the moratorium. These applications will be refused as they were made through a process according to conditions and rules of access that changed on commencement of this plan (see section 209 of the Act that requires applications inconsistent with a water resource plan to be refused).

New surface water entitlements will be available only through water trading or the release of unallocated water, which are both water market-based approaches.

Restriction on taking water from waterholes or lakes

Clause 23 places restrictions on taking water from waterholes or lakes. Natural waterholes and lakes are recognised as important habitats and places of refuge for aquatic plants and animals, and can have significant cultural value to traditional owners.

In granting an authorisation that could result in an increased take of water from a waterhole or lake, conditions may be applied to safeguard cultural and environmental values of natural waterholes and lakes. Conditions are not required if the chief executive is satisfied the taking of water will not adversely affect those values.

The restrictions listed in this section will not be able to be applied to the take of water under an authorisation that existed at commencement of this plan, or to a water allocation granted on conversion from an authorisation.

The clause details the minimum considerations the chief executive must take into account in setting these conditions, such as the impact the proposed taking may have on environmental, recreation, aesthetic and cultural values. Other matters may also be considered.

Division 3 Strategic reserve

Unallocated water held as strategic reserve

Clause 24 states that division 3 applies to unallocated water that is held as a strategic reserve.

Granting or reserving unallocated water

Clause 25 states that unallocated water can be granted or reserved for infrastructure for a project declared to be a significant project under section 26 of the *State Development and Public Works Organisation Act 1971*. An allocation can also be granted or reserved for infrastructure identified for the SEQ regional plan or a regional water security program as well as under a process in the ROP.

The amount of extra water will be limited by the plans objectives for environmental flows and water allocations; that is, the reserve will not be developed to the level where there will be negative impacts on the environmental flow objectives and water allocation security

objectives. This plan provides security for entitlement holders and the environment, whilst providing guidance for potential development and flexibility for planners.

Matters chief executive must consider

Clause 26 lists the minimum criteria that must be considered prior to the release of unallocated water under a ROP. These criteria reflect the Queensland Government's policy principles that guide the release of unallocated water. The principles seek to encourage sustainable and efficient use of water resources and are intended to ensure a clear, transparent and consistent statewide approach to providing additional allocation for consumptive use.

The minimum criteria for consideration include the need for, and efficiency of, present and proposed uses of water, the availability of an alternative water supply for the required purpose, environmental and cultural impacts, impacts on groundwater, potential for degradation of land, downstream watercourses or estuarine or marine waters, consistency with the SEQ regional plan, any system operating plan applying to the plan area and any regional water security program for the SEQ region. Subclause (2) provides that other matters may also be considered.

This approach provides flexibility in this plan, which can be used to prevent dealings with unallocated water that would be contrary to achieving plan objectives.

Division 4 Process for granting and amending interim resource operations licence

Subdivision 1 Preliminary

Process for Act, ss 176 and 184A

Clause 27 provides that division 4 states a process for the Act for granting or amending an IROL to meet future water requirements. The process applies if unallocated water is granted or reserved from the strategic reserve for infrastructure mentioned in section 25(a) or (b).

In addition, the process applies only until it is replaced by a process stated in the ROP.

Subdivision 2 Application or amendment after notice from chief executive

Applying for, or to amend, interim resource operations licence

Clause 28 states the process for a proposed owner of infrastructure mentioned in 25(a) or (b) to apply for, or to amend, an IROL. The process outlines the details to be included in an application, and the time within which the application must be made after notice is given by the chief executive. This clause permits the chief executive to give a copy of an application to any entity the chief executive considers appropriate.

Additional information may be required

Clause 29 grants the chief executive the power to give notice to an applicant to request additional information about an application, or to verify any information included in the application, or any additional information required by the chief executive to be given under subclause (a), to be verified by statutory declaration. The application lapses if the applicant does not, without reasonable excuse, respond to the request within the reasonable time stated in the notice.

Matters chief executive must consider

Clause 30 specifies the minimum criteria that the chief executive must consider for deciding an application. Other matters may also be considered.

Deciding application

Clause 31 details what the chief executive must do if satisfied the application should be approved or approved in part. The application must be approved with or without conditions. If granting or amending the IROL, the chief executive must also reserve unallocated water from the strategic reserve required for any proposed interim water allocations (IWAs) to which the approval applies.

Subdivision 3 Amendment by chief executive

Amendment of interim resource operations licence by chief executive—Act, s 184A

Clause 32 outlines a process for the Act that enables the chief executive to amend an IROL granted or amended under clause 31, at any time, to the extent the chief executive considers necessary to meet future water requirements. It also enables the chief executive to amend any other IROL as a consequence of granting or amending an IROL under clause 31, to the extent the chief executive considers necessary to meet future water requirements. Subclauses 2 to 4 detail notification requirements, including provision for the holder to make written submissions on the proposed amendment by at least 30 business days after the chief executive gives notice of the proposed amendment.

Matters chief executive must consider

Clause 33 specifies the minimum criteria that the chief executive must consider in deciding whether to amend the IROL. Other matters may also be considered.

Deciding to amend interim resource operations licence

Clause 34 enables the chief executive to amend the IROL to the extent considered necessary after consideration of clause 33(1) matters and any other matters considered appropriate.

Subdivision 4 Granting interim water allocations

Granting interim water allocations—Act, s 189

Clause 35 provides a process for the Act for granting IWAs to an amended IROL that relates to new infrastructure. The clause outlines criteria that the chief executive must be satisfied are met before granting the allocations. Subclause 3 provides that the chief executive may before acting under subsection (2), require the IROL holder to provide certain information.

Division 5 Resource operations licence

The Queensland Water Commission is undertaking a review of institutional arrangements associated with water services in south east Queensland. This includes development of an entitlements framework that would be suitable for the operation of a series of interconnected water supply sources in south east Queensland. Under this plan, the current interim water allocations or authorisations within the Central Brisbane River, Central Lockyer Valley, Cressbrook Creek, Lower Lockyer Valley, Pine Valleys, Stanley River and Warrill Valley water supply schemes continue until such time as the broader entitlement framework for the South East Queensland region and for a series of interconnected water supply sources in the same region is finalised. At that time, it would be necessary to amend this plan and other water resource plans for south east Queensland in a single process in order to provide for water entitlements to be managed under a resource operations licence and a system operating plan, in accordance with the broader framework.

Water entitlements to be managed under resource operations licences

Clause 36 states that water allocations for the Central Brisbane River, Central Lockyer Valley, Cressbrook Creek, Lower Lockyer Valley, Pine Valleys, Stanley River and Warrill Valley water supply schemes are to be managed under the resource operations licences for the schemes. The IWA's listed in schedule 9 will not be converted to water allocations and are to be managed under the resource operations licence for the Warrill Valley water supply scheme or under the system operating plan.

Deciding operating arrangements and supply requirements

Clause 37 specifies the minimum criteria that the chief executive must consider when determining operating arrangements and supply requirements for proposed or existing water infrastructure. The criteria include the impacts the infrastructure may have on water allocation security objectives, environmental, recreational, aesthetic and cultural matters, the joint operation of existing and proposed

infrastructure, any existing critical water supply strategy, any system operating plans and regional water security programs.

Division 6 Water Entitlements

Subdivision 1 Replacing water entitlements

Local government authorities

Clause 38 provides for the granting of entitlements to replace existing government authorities to take or interfere with water from a particular watercourse in the plan area. These authorities are continued under section 1037 of the Act until replaced with a water entitlement.

The clause states that the authorities may be replaced with water entitlements within 30 business days after the ROP commences, and must impose conditions giving effect to any environmental management or water sharing rules in the ROP.

Authority for SEQ Water

Clause 39 provides for SEQ Water to continue the take or interference of water from the Brisbane River, North Pine River and Stanley River under section 1037A of the Act. The authority to take will continue until it is replaced with an IROL or ROL and the water entitlements under the IROL or ROL are granted.

Subdivision 2 Granting water entitlement

Granting water entitlement to Caboolture Shire Council

Clause 40 provides for the granting of a water entitlement with an annual volumetric limit to Caboolture Shire Council for the taking of water from the Stanley River at Woodford for town water supply. Granting of the licence by the chief executive involves consideration of the flow of water over Woodford Weir or any system operating plan applying to the plan area.

Granting water entitlement to Brisbane City Council

Clause 41 provides for the granting of a water entitlement with an annual volumetric limit to Brisbane City Council for the taking of water from the impoundment of Cabbage Tree Creek Dam on Cabbage Tree Creek (parish of Kholo), Enoggera Dam on Enoggera Creek and from the impoundment of Gold Creek Dam on Gold Creek for town water supply.

Authorising existing taking of water from Morton Vale Pipeline

Clause 42 provides that the chief executive must grant an interim water allocation to the owners of land who have a contract with SunWater for taking water from the Morton Vale Pipeline. This process will occur through a regulation under section 1014(2)(ga)(i) of the Act.

Division 7 Converting authorisations to water allocations

By allowing for the establishment of water allocations throughout the plan area, this plan makes a significant change in the way water entitlements will be specified and managed.

Existing water entitlements are currently attached to land and can only be bought and sold with the land to which they attach. Water entitlements that convert to water allocations can be traded separately from land.

When water entitlements convert to tradable water allocations, ownership will be recorded on a title registration system called the "Water Allocations Register", which is similar to the State's Land Titles Register. People will then be able to buy or sell water allocations in much the same way as they buy and sell land. This market-based system allows people to obtain water and is expected to promote the movement of water to high value uses. It will also provide an incentive for efficiency, with entitlement holders able to sell any surpluses, or use them to enhance their own production. The rules under which water allocations can be traded, and the areas where trading can occur, will be developed in consultation with the community as part of the resource operations planning process.

Among other things, the rules will be structured to ensure consistency with the plan objectives set for water allocation holders and the environment.

Water allocations within a priority group or subcatchment area will also be specified in terms of performance over the simulation period—the water allocation security objective.

Unlike water licences, water allocations are not subject to periodic renewal, and will endure beyond the 10 year life of this plan. However, improved information may lead to better assessments of the water that is available to be shared among users. In such circumstances, the water sharing rules defined in the ROP may be amended. Water users and the general community would be involved in further consultations as part of any such amendment process.

Subdivision 1 General

Application of div 7

Clause 43 explains that division 7 applies only to water allocations converted, under the resource operations plan, from authorisations and local government authorities replaced with water allocations under section 38.

Section 121(1)(a) of the Act establishes that on the day the ROP commences, all authorisations to be converted under this plan will expire and the chief executive must supply the holders of these expired water licences with water allocations or other authorities.

Location for taking water

Clause 44 requires the location for taking water stated on a water allocation include the place at which water could have been taken under the authorisation.

This location to take water is not to be confused with the location of works. For example, a location may be specified as a particular reach of a watercourse, in kilometres or Adopted Middle Thread Distance (see the dictionary in schedule 15), from which water may be accessed. Traditionally, holders of entitlements were limited to taking water from a specified ‘place’ that was usually identified by a lot and plan number and was the point where a bore or pump was situated. By

changing this to a location, the ROP will allow holders of allocations to take water from anywhere within their designated location, irrespective of where that water is to be used.

Purpose to be stated on water allocation

Clause 45 states that the purpose of the entitlement must be stated on the water allocation. The purpose is to be either 'distribution loss' or 'any'. The 'any' purpose specification is designed to allow maximum flexibility in a trading environment as the entitlement is not tied to a particular activity (e.g. irrigation) and could move to other uses.

Subdivision 2 Water allocations for taking supplemented water

In this subdivision, a framework is set down for conversion of water authorisations into water allocations.

Nominal volume for water allocation

Clause 46 states that the nominal volume for a water allocation is the annual volume stated on the existing authorisation.

IWA's in the Central Lockyer Valley water supply scheme currently state an area that may be irrigated. In converting these IWA's to water allocations the chief executive must have regard to the volume of water required to efficiently irrigate the area but not more than the volume calculated by multiplying the area in hectares by 3.4ML.

Priority groups

Clause 47 defines water allocations to take supplemented water in the Central Brisbane River water supply scheme, Central Lockyer Valley water supply scheme, Cressbrook Creek water supply scheme, Stanley River water supply scheme, Pine Valleys water supply scheme, Lower Lockyer Valley water supply scheme, Warrill Valley water supply scheme, and Caboolture River, as either high priority A, B and C or medium priority.

High priority groups will receive a higher level of reliability of water supply than medium priority groups to reflect the supply provided for under this plan (schedule 8 details the water allocation security objectives).

Subdivision 3 Water allocations to take unsupplemented water

This plan provides for some existing unsupplemented water entitlements (for example, area-based or licences for taking water under 'water harvesting' conditions) to convert to tradable volumetric water allocations through the ROP. Water allocations will be tradable in accordance with rules established under the ROP. The ROP will be amended within four years (priority area 2) and within six years (priority area 3) after the finalisation of the water resource plan to effect these conversions (see clause 95).

Elements of a water allocation

Clause 48 states that a nominal volume, annual volumetric limit and maximum rate at which water may be taken must be stated on the water allocation. The water allocation may state a daily and monthly volumetric limit. The nominal volume is the volume of water, in megalitres (ML), that represents a share of the total water available to a group of water allocations that can be taken by a holder of a water allocation. The volumetric limit represents the maximum amount of unsupplemented water that can be taken under an entitlement in a water year or on a daily basis.

A maximum rate (in litres per second) at which water may be taken will be specified on each water allocation. If not appropriately managed, the rate at which water may be taken can impact on environmental flow objectives and downstream entitlement holders. Refer to schedule 11 for pump size-discharge (litres/second) conversion rates.

Nominal volume for water allocation

This plan proposes that all water entitlements being converted to water allocations will state a nominal volume on the water allocation. The

nominal volume represents, in megalitres, the share of water available to holders of water allocations in the particular group of authorisations, known as water allocation groups; to which they belong, for example, unsupplemented irrigation, water harvesting, town water supply or other authorisations. This volume will be an important part of a water allocation because it will define the water allocation's proportional annual volumetric share of the total water available to a group of water allocations.

The nominal volume should not be confused with the extraction limits that would be applied as part of the water sharing rules to be developed in a ROP—for example, the annual volumetric limit. The water that could actually be taken by the water allocation within a particular year will be subject to the water sharing rules and the actual local availability of water in each subcatchment area. In dry years, the amount of water that could actually be taken by each water allocation may be less than the nominal volume, while in wetter years the amount of water that could be taken may exceed the nominal volume.

Clause 49 states the criteria that must be considered in deciding the nominal volumes for water allocations to take unsupplemented water. Subclause (a) specifies matters for consideration including the required volume of water for efficient irrigation of an area, water taking capacity of existing works, volumes and efficiency of part water use, flow conditions under which water may be taken and the local availability of water.

Subclause (b) specifies that the total of the nominal volumes specified on all unsupplemented water allocations in each subcatchment area must not be greater than the volumes for simulated mean annual diversions specified in column 2 (for unsupplemented irrigation – class A), column 3 (for the take of unsupplemented water in the Central Brisbane River, Lower Brisbane River, Central Lockyer Valley, Lower Lockyer Valley, Pine Valleys, Stanley River and Warrill Valley water supply schemes or water harvesting – class B), column 4 (for water harvesting in unsupplemented areas – class C), column 5 (for town water supply – class D) and column 6 (any other authorisation – class E) of the table in schedule 10 of this plan. These simulated mean annual diversion volumes are calculated using the IQQM and represent the average volume of water taken under authorisations in the simulated period (1889-2000).

The process for determining the nominal volumes will involve progressive assessment of groups of area licences throughout the plan area by the department prior to their conversion in the ROP.

Annual volumetric limit for water allocation

The annual volumetric limit represents the maximum amount of unsupplemented water that can be taken under an entitlement in a year.

Clause 50 specifies how the annual volumetric limit for the take of unsupplemented water under an authorisation is to be decided.

If the authorisation already states an annual volume, that volume will be the annual volumetric limit.

For other authorisations that convert to water allocations, the annual volumetric limit will be decided by the chief executive having regard to the criteria set out in subclause (b). These criteria include the conditions under which water may be taken under the authorisation, including any stated area that may be irrigated and the volume of water required to irrigate the area efficiently; the water taking capacity of any works, being used or authorised to be used, for taking water under the authorisation; the annual volumes of water estimated by the chief executive to have been taken under the authorisation during the period, of not more than 10 years, immediately before the commencement of this plan; and the efficiency of the use of that water. Other matters may also be considered.

Daily and monthly volumetric limits for water allocation

Clause 51 specifies how the daily volumetric or monthly limit for the take of water is determined for existing authorisations that are to be converted to water allocations. The daily volumetric limit, for a water allocation, means the maximum volume of water that may be taken under the allocation in a day. The monthly volumetric limit, for a water allocation, means the maximum volume of water that may be taken under the water allocation in a month.

For authorisations that convert to water allocations, the daily or monthly volumetric limit will be decided by the chief executive. The criteria that must be considered by the chief executive include the local availability of water; the conditions under which water may be taken under the authorisation; the volumes of water estimated by the

chief executive to have been taken under the authorisation during the period, of not more than 10 years, immediately before the commencement of this plan and the simulated mean annual diversion for the authorisation and the efficiency of the use of that water. Other matters may also be considered.

Maximum rates

Clause 52 specifies how the maximum rate for taking unsupplemented water under a water allocation is determined.

Where an authorisation states a maximum rate, it is the maximum rate of take for unsupplemented water under that allocation.

Where the maximum rate is not stated on the authorisation, but a pump size that is listed in schedule 11, column 1 is specified on a related development permit, then the rate stated in schedule 11, column 2 applies. However, if the authorisation holder can demonstrate to the chief executive's satisfaction that the rate of take is different from the rate listed in schedule 11, column 2, then in deciding the rate the chief executive must have regard to the conditions under which water may be taken under the authorisation; the water taking capacity of the pump to which the development permit relates under normal operating conditions; and the irrigation or water distribution system related to that pump and its efficiency over time. If the chief executive is not satisfied of these criteria, the maximum rate of take is the rate stated in schedule 11, column 2, for the pump size.

These considerations also apply to deciding a rate of take where an authorisation does not state a maximum rate and where a pump size specified on a related development permit is not mentioned in schedule 11, column 1.

The maximum rate of take for any other water allocation is determined by the chief executive in consideration of the nature of the existing licence and the estimate of the rate of take or measurement of the actual rate at which water is taken under the licence. However, the rate cannot be more than that specified for the pump size in schedule 11.

Conditions

Clause 53 states that the chief executive must consider the conditions stated on an authorisation to take unsupplemented water in deciding the conditions under which unsupplemented water may be taken under an allocation. Essentially, a holder of an allocation cannot take water unless authorisation conditions are met. For example, a condition may specify that water can only be taken when the flow rate of a watercourse is above a specified value.

Water allocation groups

Clause 54 states how the water allocation groups are determined for unsupplemented water allocations. Water allocation groups are based on subcatchment areas and the purpose of the authorisation. The water allocation group attaches to a specific level of performance. Initially, the type of authorisation and the subcatchment area in which the authorisation allows the taking of water are used in determining the water allocation group to which the water allocation is assigned. However, following initialisation of the water allocation group, a water allocation may, subject to the rules that will be determined in the ROP, be moved to another location and either adopt a new water allocation group or remain in the same group. This provides flexibility to the holder of a water allocation and allows the holder to trade the allocation.

Division 8 Water licences for taking unsupplemented water

Elements of a water licence

Clause 55 requires that a water licence for taking unsupplemented water must state the annual volumetric limit and the maximum rate at which water may be taken. The volumetric limit is the maximum annual amount of unsupplemented water that can be taken under an entitlement.

Amending water licences

Clause 56 relates to amending licences or licence that replaced an authority under section 1037 of the Act, to take unsupplemented water

that was in existence on commencement of this plan and states an area that may be irrigated.

In parts of the plan area that will not be covered by the ROP, existing licences and other authorisations to take water will continue to have effect and will not be converted to allocations. However, this plan provides that these licences may be amended for consistency with plan objectives to state a purpose, an annual volumetric limit, a maximum rate of take, flow conditions and any other conditions decided by the chief executive.

Annual volumetric limit for water licence

The annual volumetric limit represents the maximum amount of unsupplemented water that can be taken under an entitlement in a year. Clause 57 specifies how the annual volumetric limit for the take of unsupplemented water under a water allocation converted from existing authorisations is to be decided. If the authorisation already states an annual volume, that volume will be the annual volumetric limit.

For other authorisations that convert to water allocations, the annual volumetric limit will be decided by the chief executive having regard to the criteria set out in subclause (b). These criteria include the conditions under which water may be taken under the authorisation, including any stated area that may be irrigated and the volume of water required to irrigate the area efficiently; the water taking capacity of any works, being used or authorised to be used, for taking water under the authorisation; the annual volumes of water estimated by the chief executive to have been taken under the authorisation during the period, of not more than 10 years, immediately before the commencement of this plan; and the efficiency of the use of that water. Other matters may also be considered.

Maximum rates

Clause 58 specifies how the maximum rate for taking unsupplemented water under a water licence is determined.

Where a licence states a maximum rate, it is the maximum rate of take for unsupplemented water under that allocation.

Where the maximum rate is not stated on the licence, but a pump size that is listed in schedule 11, column 1 is specified on a related

development permit, then the rate stated in schedule 11, column 2 applies. However, if the authorisation holder can demonstrate to the chief executive's satisfaction that the rate of take is different from the rate listed in schedule 11, column 2, then in deciding the rate the chief executive must have regard to the conditions under which water may be taken under the licence; the water taking capacity of the pump to which the development permit relates under normal operating conditions; and the irrigation or water distribution system related to that pump and its efficiency over time. If the chief executive is not satisfied of these criteria, the maximum rate of take is the rate stated in schedule 11, column 2, for the pump size.

These considerations also apply to deciding a rate of take where a licence does not state a maximum rate and where a pump size specified on a related development permit is not mentioned in schedule 11, column 1.

The maximum rate of take for any other water licence is determined by the chief executive in consideration of the nature of the existing licence and the estimate of the rate of take or measurement of the actual rate at which water is taken under the licence. However, the rate cannot be more than that specified for the pump size in schedule 11.

Division 9 Critical water supply arrangement

As continued take of water during critical water supply periods can affect all users including town water supply, there is a need to develop a critical water supply arrangement for the plan area.

Critical water supply arrangement

Clause 59 states that a critical water supply arrangement for water in the plan area must be developed as part of the ROP. The arrangement is needed to ensure essential supplies are met in times of drought conditions worse than any that have occurred in the period of historical record.

Subclause 2 provides that if the arrangement is not included in the ROP at the time the arrangment is approved, the ROP must state that an amendment may be made to the ROP in accordance with the Act to include the arrangement within one year after the commencement of the ROP.

Subclause 3 states that in deciding the critical water supply arrangement, the chief executive must consider any existing arrangement for critical water supply management, any system operating plan applying the plan area, and any regional water security program for the SEQ region.

Water sharing and infrastructure operating rules

Clause 60 specifies what rules and details must be included in the critical water supply arrangement, including the water sharing and infrastructure operating rules that state the share of water that will be managed under the system operating plan applying to the plan area, the details of situations in which the rules will apply, and the necessary consultation with affected parties in deciding the arrangements content. It also requires that the arrangement include monitoring and reporting requirements.

Division 10 Miscellaneous

Releasing water through fish ways

Clause 61 requires the use of fish ways to release water from dams or weirs where possible. This aims to mitigate the effects of water infrastructure on fish movement along watercourses. Environmental management rules for infrastructure in the ROP must reflect this requirement.

Part 6 Strategies for achieving outcomes (groundwater)

Division 1 Preliminary

This plan manages groundwater taken from Cressbrook Creek, Lockyer Valley, Warrill-Bremer alluvial groundwater management areas and Watercourse buffer zone groundwater management areas.

Groundwater means artesian water and subartesian water. Subartesian water is water in an aquifer that does not flow naturally to the surface when tapped by a bore. The areas covered by the Cressbrook Creek, Lockyer Valley, Warrill-Bremer alluvial and Watercourse Buffer Zone groundwater management areas are shown in schedule 2 and are referred to collectively as Groundwater Management Areas.

Strategies for groundwater

Clause 62 states that the strategies in part 6 only apply to groundwater.

Division 2 Cressbrook Creek alluvial groundwater management area

Cressbrook Creek joins the Brisbane River downstream of Toogoolawah. In this subcatchment small crops, lucerne and other pasture crops are irrigated with groundwater and surface water. Groundwater is recharged through direct rainfall infiltration and stream flow in Cressbrook Creek.

In 1984, the Cressbrook Creek Weir was constructed upstream of Toogoolawah to enhance local groundwater recharge. The Cressbrook Creek declared subartesian area was declared at this time. Licences were issued for existing bores and wells in 1987, and metering of groundwater use commenced in 1988. In 1997, the Lower Cressbrook (recharge) Weir was constructed further downstream.

The area covered by the Cressbrook Creek alluvial groundwater management area is shown in schedule 2. This plan contains a management framework to further protect this resource.

Limitation on taking groundwater—Act, s 20(6)

Clause 63 prohibits the taking of groundwater unless for stock and domestic purposes, under a water entitlement or permit, or to allow for monitoring or salinity control.

Decisions about taking groundwater

Clause 64 states that the chief executive must not make a decision that would increase the average volume of groundwater taken in the plan area, except in relation to a decision about water permits, reinstating or replacing expired water licences, water sharing rules or decision required to be made under the ROP. This clause also applies to an application for the take of groundwater made but not decided before the commencement of this plan.

Amending water licences to take groundwater

Clause 65 allows for the amendment of existing licences under a process in the ROP and allows for the amendment under a process in the ROP to state any other conditions decided by the chief executive. Subclause (3) states what the chief executive must have regard when deciding the annual volumetric limit for a water licence. The chief executive must have regard to the water taking capacity of the works, annual volumes estimated to have been taken over the last ten years, water use efficiency, impacts on surface water flows, data collected about groundwater water levels and whether the amount taken is consistent with the outcomes and objectives of this plan.

Division 3 Lockyer Valley groundwater management area

Groundwater in the Lockyer Valley is the primary source of water for irrigators in the valley. A close relationship exists between surface water flows in creeks and aquifer recharge in the Lockyer Valley. This relationship coupled with different management regimes provides for a very complex system.

There are three main sources of groundwater in the valley, those being alluvium, fractured rocks not part of the Great Artesian Basin and artesian sediments which are managed under the *Water Resource (Great Artesian basin) Plan 2006*. The Moreton Water Resource Plan only deals with that groundwater located in the alluvium – referred to as Groundwater Unit 1 – and groundwater located in the fractured rocks (excluding water managed under the *Water Resource (Great Artesian basin) Plan 2006*) – referred to as Groundwater Unit 2.

The Lockyer groundwater management area has been divided into four implementation areas, those being 1 - Central Lockyer Creek, 2 – Upper Lockyer Creek, Flagstone Creek, Tenthill Creek and Ma Ma Creek, 3 – Sandy (Parish of Blenheim) Creek and Upper Laidley Creek and 4 – Lower Lockyer Creek and Buaraba Creek. Implementation areas refer to the staged implementation of plan strategies in the Lockyer Valley. The Lockyer Valley groundwater management implementation areas are shown in schedule 3.

Currently, the Central Lockyer is a declared subartesian area and groundwater use is licensed in this area. Groundwater use from Groundwater Units 1 and 2, are currently unregulated in all other parts of the valley.

Subdivision 1 General strategies

Limitation on taking groundwater-Act, 20(6)

Clause 66 prohibits the taking of groundwater unless for stock or domestic purposes, under a water entitlement or permit, to allow for monitoring or salinity control or under an authorisation issued under section 72.

Decisions about taking groundwater

Clause 67 states that the chief executive must not make a decision that would increase the average volume of groundwater taken in the plan area, except in relation to a decision about water permits, reinstating or replacing expired water licences, water sharing rules or decision required to be made under the ROP. This clause also applies to an application for the take of groundwater made but not decided before the commencement of this plan.

Subdivision 2 Implementation area 1

Implementation area 1 in the Lockyer Valley groundwater management area represents the Central Lockyer Creek and is shown in schedule 3.

Supplemented and unsupplemented groundwater areas

Clause 68 states that groundwater unit 1 in implementation area 1 consists of part of the implementation area that contains supplemented groundwater as well as part of the implementation area that does not contain supplemented groundwater.

Boundaries of supplemented groundwater area

Clause 69 states that the boundaries of the supplemented groundwater area in implementation area 1 must be stated in the ROP.

Subdivision 3 Implementation areas 2, 3 and 4

Implementation areas 2, 3 and 4 in the Lockyer Valley groundwater management area represents the remainder of the management area. These implementation areas are shown in schedule 3.

Implementation areas 2 and 3

Clause 70 outlines the type of groundwater contained within implementation areas 2, 3 and 4. Groundwater unit 1 (alluvial groundwater) of the Lockyer Valley in implementation areas 2 and 3 consist of unsupplemented water. Groundwater unit 1 in implementation area 1 contain unsupplemented and supplemented groundwater areas.

Implementation area 4

Clause 71 states that if a regulation is made under section 168 of the Act and an application for an IROL for implementation area 4 is granted under section 175 of the Act to a person nominated under the regulation, the ROP must state the boundaries of the area that is supplemented by the release of surface water from the Lower Lockyer Valley water supply scheme.

Continued taking of groundwater authorised

Clause 72 states that the owner of land on which any existing water bores to take groundwater are located can continue to take

groundwater in implementation areas 2, 3 and 4 as long as they were using those water bores to take groundwater water prior to the commencement of this plan. The clause allows for the chief executive to grant a water licence if they are reasonably satisfied that the plan outcomes and objectives are not being met. The water licence must state an annual volumetric limit.

Granting water licences

Clause 73 provides for the licensing of existing works for taking groundwater in implementation areas 2, 3 and 4. The owner of land on which the existing works for taking groundwater is located is required to notify the department of the bore and the water use. Once the chief executive is satisfied that the owner of the land on which the existing works is located is using the works to take groundwater for a groundwater-dependant activity, a water licence will be granted. This notification process occurs once a regulation under section 37 of the Act has taken effect.

For licences granted for existing take in groundwater unit 2, the water licence must state an annual volumetric limit. In deciding this annual volumetric limit the chief executive must have regard to the water taking capacity of the works, annual volumes estimated to have been taken over the last ten years, water use efficiency, data collected about groundwater water levels, affects on sustainable management of groundwater and whether the amount taken is consistent with the outcomes and objectives of this plan.

Existing take in groundwater unit 1, will be licensed and managed under a framework to be developed in consultation between the chief executive and with water users and key stakeholders during the resource operations planning phase (please refer to subdivision 4).

Subdivision 4 Water sharing rules

Water sharing rules describe the arrangements under which the flexible access to water within a management area is managed.

Water sharing rules for unsupplemented groundwater

Clause 74 states that water sharing rules must be contained within the ROP for unsupplemented groundwater in groundwater unit 1 in the management area.

The chief executive must consult with water users and water service providers in developing the water sharing rules in the implementation areas.

Subdivision 5 Amending water licences

Amending water licences to state an annual volumetric limit

Clause 75 allows for the amendment of existing licences by the chief executive under a process in the ROP to state an annual volumetric limit of water that may be taken under the water licence. An annual volumetric limit will be stated on the licence if the water sharing rules are not achieving the outcomes mentioned in Part 3 or the objectives of this plan.

Division 4 Warrill-Bremer alluvial groundwater management area

The Warrill-Bremer alluvial groundwater management area includes the Bremer River Valley area and the Warrill Creek Valley area. Currently, the Warrill-Bremer alluvial aquifers are unregulated and there is no requirement for the licensing and metering of bores. The majority of groundwater is used for irrigation purposes. Within the Warrill Creek Valley area, the extraction of groundwater has exceeded natural recharge over the last 10 years. In both the Warrill Creek Valley area and the Bremer River Valley area, recent declines in groundwater levels are in line with the overall trends of other groundwater areas. The department proposes to manage the take of groundwater within the Warrill-Bremer alluvial management area through this plan.

The Warrill-Bremer alluvial groundwater management area is shown in schedule 2.

Limitation on taking groundwater-Act, s 20(6)

Clause 76 prohibits the taking of groundwater in the Warrill-Bremer alluvial groundwater management area other than for stock or domestic purposes, in accordance with a water entitlement or water permit, for monitoring or salinity control or under an authorisation issued under section 78.

Decisions about taking groundwater

Clause 77 states that the chief executive must not make a decision that would increase the average volume of groundwater taken in the plan area, except in relation to a decision about water permits, taking groundwater for an allowable urban purpose, water sharing rules or decision required to be made under the ROP.

Continued taking of groundwater authorised

Clause 78 states that the owner of land on which any existing water bores to take groundwater are located, on the commencement of the final plan, to continue to use the water bore to take groundwater. The chief executive may under section 212 of the Act grant a water licence to the owner if the chief executive is reasonably satisfied that the plan outcomes and objectives are not being achieved and the ROP does not state a process for granting the water licence under section 212 of the Act to take groundwater. The water licence must state an annual volumetric limit.

Granting water licences

Clause 79 provides for the licensing of existing works for taking groundwater in the Warrill-Bremer alluvial groundwater management area. The owner of the land on which there is an existing water bore taking groundwater is required to notify the department of the bore and the water use. Once the chief executive is satisfied that the owner of the land is using the bore to take groundwater for a groundwater-dependant activity, a water licence will be granted. This notification process occurs once a regulation under section 37 of the Act has taken effect.

For licences granted for existing take, the water licence must state a volumetric limit. In deciding this volumetric limit the chief executive

must have regard to the water taking capacity of the bore, annual volumes estimated to have been taken over the last ten years, impacts on surface water flows, data collected about groundwater water levels, affects on the sustainable management of groundwater and whether the amount taken is consistent with the outcomes and objectives of this plan.

Granting water licence to take groundwater for allowable urban purpose

Clause 80 allows groundwater to be taken in the Warrill-Bremer alluvial groundwater management area for an allowable urban purpose. Water licences granted for allowable urban purposes will have a maximum rate of take of 5 litres per second. Allowable urban purposes is defined in the dictionary in Schedule 15. This section does not apply to existing water bores.

Division 5 Watercourse buffer zone groundwater management area

The department recognises that in many areas there is significant interaction between groundwater and surface water. Areas of concern are those where current development or potential development will have a detrimental effect to stream base flows. These areas are identified in schedule 12.

Boundaries of watercourse buffer zone

Clause 81 states that the boundaries of the watercourse buffer zones are mentioned in schedule 12.

Limitation on taking or groundwater—Act, s 20(6)

Clause 82 prohibits the taking of groundwater in the buffer zones other than for stock or domestic purposes, to allow for monitoring or salinity control or under an authorisation issued under section 83.

This limitation on take is aimed at sustainable management of the resource and protection of groundwater-surface water interactions.

Continued taking of groundwater authorised

Clause 83 allows for continued use of a water bore in a watercourse buffer zone by the owner of land on which an existing water bore or replacement water bore, is situated.

Division 6 Miscellaneous

Relationship with Integrated Planning Act 1997

Clause 84 outlines the interaction of this plan with the *Integrated Planning Act 1997* regarding development approval of works for taking groundwater. Works for taking groundwater for stock or domestic purposes, monitoring or salinity control purposes and works replacing works for taking groundwater are self-assessable development. Works for taking groundwater for any other purposes are assessable development (refer to schedule 8 of the *Integrated Planning Act 1997*).

Part 7 Strategies for achieving outcomes (overland flow)

Overland flow water is water that runs off land following rainfall, before it enters a watercourse, or flood water that discharges from a watercourse, or floodplain (overbank flows). It does not include water collected on roofs for rainwater tanks, tail water recycling or natural infiltration (please refer to the Act for a definition of overland flow).

If overland flow is left unchecked there can be longer term implications for town, industrial and irrigation supplies and for landholders who rely on beneficial flooding. Riverine and coastal environments together with fishing and other industries that rely on natural flows can also be impacted. Overall, uncontrolled overland flow development may compromise the planned outcomes of this plan.

Limitation on taking overland flow water—Act, s20(6)

Clause 85 prohibits the take of overland flow water other than for stock or domestic purposes, for a purpose where the capacity of works are less than 5ML, water sensitive design, an environmental authority, under a development permit for an environmentally relevant activity, to capture contaminated agricultural runoff, under an authority under section 86, or under an authorisation.

This limitation on take is aimed at sustainable management of overland flow water.

Taking water using existing or replacement of existing overland flow works authorised

Clause 86 allows for the continued use of existing overland flow works and the replacement of existing overland flow works as long as the replacement works do not take more water than the replaced works (i.e. desilting of dams).

Licensing existing taking of overland flow water using works

Clause 87 specifies that a regulation under section 37 of the Act may require the owner of land on which there is existing works authorised under section 86 to notify the chief executive of the works and water use. The chief executive may grant a licence to the owner to take overland flow water using the works, under a process in the ROP, once the notification has been received.

Relationship with Integrated Planning Act 1997

Clause 88 outlines the interaction of this plan with the *Integrated Planning Act 1997* regarding development approval of works for taking of or interfering with overland flow water. Works for the taking or for the interfering of overland flow water for those mentioned in section 85(1)(b) or 85(1)(e) and for stock or domestic purposes are self-assessable development. Works for taking or interfering with overland flow water for any other purposes are assessable development (refer to schedule 8 of the *Integrated Planning Act 1997*). Any repairs or maintenance to overland flow structures or works constructed under a development permit or to which sections

86 or 87 apply that do not alter the design of the works are exempt from any requirements under the *Integrated Planning Act 1997*.

Part 8 Strategies for achieving outcomes (general)

Measuring devices

Clause 89 states that any take of water under an entitlement other than for stock or domestic purposes must be measured. This is according to part 7 of the *Water Regulation 2002*.

Part 9 Monitoring and reporting

Monitoring and reporting are essential elements of this plan because they provide a basis for measuring and enforcing compliance with the plan's objectives and requirements. They also provide a trigger for any review of this plan that may be necessary and help identify further research needs.

Monitoring and regular reporting on this plan will ensure that any emerging issues are addressed promptly through plan amendment, rather than awaiting the mandatory 10-year review. In this way, water users and other interested parties can have confidence in the security of water entitlements beyond the 10-year life of this plan.

Monitoring

Clause 90 details the water and natural ecosystems monitoring requirements used to assist in assessing the effectiveness of proposed management strategies (under parts 5 to 8) for achieving the outcomes of this plan stated in part 3. Subclause 2 provides that the monitoring requirements are to be achieved by programs undertaken by operators of infrastructure for interfering with water under the ROP, monitoring programs administered by the chief executive and relevant State agencies as well as programs undertaken by community organisations following negotiations with relevant State agencies.

Monitoring programs to be undertaken by holders of resource operations licences

Clause 91 details the specific requirements of a resource operations licence holder's monitoring program and they must be satisfactory to the chief executive. Subclause 3 provides that the monitoring programs must assist the chief executive to assess the effectiveness of the strategies under parts 5 to 8 of the water resource plan.

Resource operations licence holders to give reports

Clause 92 sets out the reporting requirements for a resource operations licence holder in relation to the monitoring programs in clause 91. It specifies the content required, the way in which the reports must be given, and time limits for completing the reports. Any reports under this section must be given in a way that it is consistent with the department's Water Monitoring Reports Standards.

Minister's report on plan—Act, s 53

Clause 93 specifies the reporting requirements for the minister, including the timing and content of reports. The report assesses the effectiveness of the implementation of this plan in achieving the plan outcomes. If the minister is satisfied about any of the matters outlined as triggers in clause 97 for a plan amendment or replacement of this plan, the report must include a consideration of the matters.

This clause also includes a requirement that the minister report on groundwater and overland flow three years after the resource operation's plan commencement, to the extent that information is available about the level of development of works for taking overland flow water and groundwater in the plan area.

In accordance with section 1009 of the Act, the chief executive must make a copy of the report available for inspection by the public, during office hours on business days, at the head office or the appropriate regional office of the department.

Part 10 Implementing and amending this plan

The water resource plan will be primarily implemented through a ROP. The ROP will set out how existing water entitlements will convert to tradable volumetric water allocations in accordance with the water resource plan. The ROP will also define, for each part of the plan area, the water sharing and environmental flow rules that will be applied in the day-to-day management of stream flows and water infrastructure to ensure the water resource plan's outcomes are achieved. Water service providers will be required to demonstrate through monitoring and reporting that operating arrangements for their supply infrastructure comply with these rules.

A critical water supply strategy detailing with how water will be managed and shared in times of extreme drought will be another important element of the ROP. In addition, the ROP will detail trading rules for each part of the plan area to ensure that the water resource plan's environmental flow objectives and water allocation security objectives are not compromised under a water market system.

Priority areas for converting to, or granting, water allocations

Clause 94 refers to schedule 13 for a description of the priority areas within the plan area for converting entitlements to, or granting, water allocations.

Implementation schedule

Clause 95 provides a schedule for the implementation of this plan and conversion to, or granting of, water allocations. Whereas certain provisions are to be implemented on commencement of this plan or shortly afterwards, this clause provides the longer term staged implementation and conversion arrangements. The priority stages are based on relative urgency. Within 2 years after the commencement of this plan, the matters detailed in subclause 2 will be implemented through a ROP. Within 4 years after the commencement of this plan, the matters detailed in subclause 3 will be implemented through an amendment to the ROP. Within 6 years after the commencement of this plan, the matters detailed in subclause 4 will be implemented through an amendment to the ROP. Under subclause 5 it is proposed

that a system operating plan that applies to the plan area will be made. This system operating plan will state additional arrangements for taking water under water entitlements within water supply schemes. (please see the discussion on part 3 division 5 in the explanatory notes). Subclause 6 provides that subclauses 2 to 4 do not limit the matters that may be included in the ROP.

Minor or stated amendment of plan—Act, s 57

Clause 96 states the types of amendments that may be made to this plan under section 57(b) of the Act that do not require public notification. These amendments allow for efficient and timely responses to changes occurring in the plan area that may be adversely affecting the achievement of plan outcomes.

Amending or replacing plan

Clause 97 outlines the situations where the Minister must consider either amending the current plan, or preparing a new plan to replace the current plan. Subclause (a) ensures that options for making additional water available to meet any future water demand can be considered for inclusion in this plan. This is provided that existing entitlements are being efficiently utilised and an economically viable and ecologically sustainable need for the extra water supplies exists. Under clause (b), the Minister may also amend or replace this plan if this plan is inconsistent with the SEQ regional plan.

Schedule 1 Plan area

Schedule 1 contains a map of the area of the Moreton to which this plan applies, as well as the location of nodes within the plan area. See clauses 4 and 7 and schedule 6 for more information.

Schedule 2 Groundwater management areas

Schedule 2 contains a map of the groundwater management areas. See clause 5 and schedule 3 for more information.

Schedule 3 Implementation areas for Lockyer Valley groundwater management area

Schedule 3 contains a map of the Lockyer Valley implementation areas. See clause 5 for more information.

Schedule 4 Subcatchment areas

Schedule 4 contains a map of the subcatchment area boundaries within the plan area. See clause 6 for more information.

Schedule 5 Subcatchment area names

Schedule 5 lists the subcatchment area names in the plan area. See clause 6 for more information.

Schedule 6 Nodes

Schedule 6 lists the nodes used in this plan and their location. The location is given as a measurement of Adopted Middle Thread Distance (AMTD). This gives the distance in kilometres, measured

along the middle of a watercourse, that a particular node is located from the mouth of that watercourse, or from a junction with the main watercourse. See clause 8 for more information.

Schedule 7 Environmental flow objectives

Schedule 7 states the environmental flow objectives for particular performance requirements. See part 4, division 2 for more information.

Part 1 Low flow objectives

This part states the no flow and low flow objectives that should be achieved at particular nodes. The following table describes the purposes of the various indicators.

Performance Indicator	Description	Key Ecological and Geomorphological Functions
Number of periods of no flow (for example, of at least 1 month but less than 3 months)	Indicator of drying spells, and measure of difference between pre-development and scenario case.	Dewatering of aquatic habitats, isolation of pools, no fluvial transport of organic matter or sediment, dominance of marine influence in estuaries.
Daily flow less than 1 megalitre	A broad-brush indicator of low flows and used to determine changes, from reference condition, to periods of low flows.	Dewatering of aquatic habitats, isolation of pools, no fluvial transport of organic matter or sediment, dominance of marine influence in estuaries.
50% and 90% daily flow	A statistical measure of low flow into estuaries.	Maintaining ambient hydrodynamic conditions in the estuaries, maintaining connectivity between pools and between non-tidal reaches and estuaries.

Source: Brizga, S.O.: *Burrum River Environmental Flow Strategy*, March 2002.

Part 2 Medium to high flow objectives

This part states the medium to high flow objectives to be achieved at particular nodes. This schedule consists of mandatory objectives. The following table describes the purposes of the various indicators.

Performance Indicator	Description	Key Ecological and Geomorphological Functions
Mean annual flow	A broad brush indicator to quickly indicate volumes of water removed from the system. Mean annual flow does not take into account flow variability.	An important determinant of water availability in riverine systems and overall freshwater input to estuarine and marine areas.
1.5 year daily flow volume	A measure of a volume of flow expected to occur, on average, every 1.5 years.	Localised movement in stream beds, inundation of riparian vegetation.
5 year daily flow volume	A measure of a volume of flow expected to occur, on average, every 5 years.	Bed movement in whole reaches, riparian zone and wetland wetting
20 year daily flow volume	A measure of a volume of flow expected to occur, on average, every 20 years. A significantly large flow event that occurred 5 times throughout the simulation period.	"Resets" changes in stream bed stability, provision of wetland connectivity and replenishment.
Flow regime variability		
Flow regime class	An indicator of the seasonality of flows, and when large flows normally start occurring.	Lifecycles of riverine, estuarine and marine biota. Trigger flows for ecological processes should reflect timing.
Annual proportional flow deviation	A measure of the variability of flow.	Significant because native in-stream flora and fauna have adapted to variable flow patterns.

Source: Brizga, S.O.: *Burrum River Environmental Flow Strategy*, March 2002.

Schedule 8 Water allocation security objectives

Schedule 8 states the water allocation security objectives of this plan. See part 4, division 3 for more information.

Part 1 Supplemented water

This part states the water allocation security objectives for supplemented water allocations. The following table describes the performance indicator used for the objectives.

Water User Type	Performance Indicators	Description
Supplemented water	Monthly supplemented water sharing index	The percentage of months that a water user in a particular priority group could have expected to get 100% of their monthly allocation over the simulated period.

Part 2 Unsupplemented water

This part states the water allocation security objectives for unsupplemented water allocations. The following table describes the performance indicators used for the objectives.

Water User Type	Performance Indicators	Description
Unsupplemented water (all entitlements)	70% Unsupplemented water sharing index	The percentage of the simulated mean annual diversion that water users, in a particular water group within a particular subcatchment area, could have expected to take in the 70th percentile wettest years.

Schedule 9 Interim Water Allocations

Schedule states the holders of interim water allocations as well as the volume of water, purpose of the interim water allocation and priority.

Schedule 10 Volumes for simulated mean annual diversions

Schedule 10 states the simulated mean annual diversions for subcatchment areas. See clause 49 for more information.

Schedule 11 Rates and pump sizes

Schedule 11 states the maximum rate of take of water in litres per second according to pump sizes.

Schedule 12 Watercourse Buffer Zones

Schedule 12 describes the watercourse buffer zones and the setback distance in metres from the high bank of the watercourse within which there is a restriction on the installation of new works to take groundwater for purposes other than stock or domestic, monitoring or salinity control or though a water bore that was in existence at the commencement of this plan. Please see Part 6, division 5 for more information.

Schedule 13 Priority areas

Schedule 13 describes the three priority areas for converting to, or granting of, water allocations. See clause 95 for more information.

Schedule 14 Formula

Schedule 14 contains the formula to determine the annual proportional flow deviation. See schedule 15 for a definition.

Schedule 15 Dictionary

Schedule 15 contains the dictionary of defined terms used in this plan.

ENDNOTES

1 Laid before the Legislative Assembly on . . .

2 The administering agency is the Department of Natural Resources and Water.