

4. Allocation and management issues

4.1 Current level of groundwater allocation

Groundwater in the Isaac–Connors catchment is used to water livestock and for irrigation, mining, urban, industrial and domestic purposes (Table 2). In the amendment area, 43 authorisations totalling 13 272 ML of

Table 2: Groundwater allocations in the Isaac–Connors catchment (megalitres per year)

Sector	Allocation (ML/y)
Industrial	3
Mining	3 781
Stock and domestic	6
Urban	150
Irrigation	9 332
Total (ML)	13 272

Table 3: Groundwater allocations sourced from various groundwater systems in the Isaac–Connors catchment (megalitres per year)

Aquifer system	Allocation (ML/y)
Alluvium	12 502
Tertiary	400
Basement (Permian)	60
Undefined	273
Total (ML)	13 272

entitlement are held, either as permits or licences. More than 9000 ML is assigned to irrigation, although actual use is estimated to be much lower than this. Allocations for mining account for 3781 ML, urban use 150 ML and industrial use just 3 ML. Entitlements are taken from three types of aquifer (Table 3 and Figure 6), mostly from alluvium. Tertiary basalt aquifers supply about 400 ML and basement fractured rock aquifers provide 60 ML.

4.2 Issues in the amendment area

Issues that will be considered in developing the draft amendment include:

- water availability in the amendment area
- current levels of water use and projected future demand
- water resource regulatory arrangements
- more consistent specification for water entitlements
- provision of water to support **groundwater-dependent** ecosystems
- possible mechanisms for establishing tradable water entitlements
- water-use efficiency
- monitoring and reporting arrangements for assessing the effectiveness of the implemented amendment.

Groundwater in the draft amendment area was not dealt with in the Fitzroy WRP and demand and use are increasing, principally for mining and irrigated agriculture. Under this pressure, exacerbated by declining rainfall over the past 10 years, water tables are approaching their lowest recorded levels.

An understanding of the volume that can be safely taken from aquifers is central to long-term groundwater management in the amendment area. However, the quality and extent of available hydrologic data have a direct bearing on the confidence with which sustainable supply can be determined.

Since hydrologic information is currently limited, a degree of restraint will guide the draft amendment’s approach to groundwater allocation and management, while providing a sound foundation for more robust arrangements

to be developed as improved data become available.

4.3 Management of the aquifer system

Monitoring and licensing requirements that have applied to the Highlands Subartesian Area since 1984, ceased to have effect in the northern part, when it was excised from the declared area in 1992.

However, since 2002 information about new activity in non-declared areas has been generated through provisions of the Act that require all new bore work to be conducted and logged by licensed drillers.

In 2003 the then Department of Natural Resources and Mines developed new policy guidelines reviewing the taking of groundwater from the Isaac–Connors alluvium, reducing the take from 1.0 to 0.5 ML per hectare of useful aquifer area. This measure was taken as a response to the significant increase in applications for large volumetric entitlements, record low water levels in the aquifer, and concerns that the groundwater resource may be at risk of being overcommitted.

4.4 Regulatory arrangements

The previous licensing regime under which groundwater was managed took little account of environmental factors because of the paucity of information available. In addition, information on the water balance of the aquifer systems was limited and possible surface water and groundwater linkages were not considered.

A more rigorous and consistent definition of water licences in terms of maximum annual volume of diversion, bore separation distances, and other access conditions is needed to improve the security of all entitlements.

The Isaac River and Connors River alluvial aquifers support significant private investment in farm water supply infrastructure, and additional uncontrolled development will pose a risk to this investment by reducing supply reliability. The current arrangements offer limited protection for this investment and do little for groundwater-dependent ecosystems.

The existing monitoring program for groundwater resources will provide much of the hydrologic information on which the draft amendment will be based. However, there may be a further need to improve monitoring and

reporting of groundwater characteristics to ensure the amendment is effective.

4.5 Providing water for the environment

The draft amendment will document the occurrence of groundwater dependent ecosystems (GDEs) associated with the alluvial aquifers and their water requirements.

GDEs are ecosystems whose ecological processes and species composition are determined by the presence of groundwater. The health of these ecosystems is generally dependent on a combination of rainfall, streamflow and groundwater.

Examples of ecosystems that can rely on groundwater include lagoon, wetland, terrestrial vegetation, spring and riverine ecosystems.

If significant GDEs within the area are identified, their needs will be considered in the preparation of the draft amendment.

In addition to the many plant and animal species whose existence depends on groundwater, there is a range of aquatic invertebrates and other organisms (stygo fauna) that live within aquifer systems. Some of these inhabit the interface between surface water and aquifers (hyporheic zone) and others live deeper within the aquifer system. Until their ecology and their role in maintaining aquifer health and water quality is better understood, caution should guide groundwater management and how groundwater is provided to support ecosystem health. In the Isaac–Connors catchment, the extent to which the relevant types of aquatic ecosystems depend on groundwater is not well known and will need to be determined by a technical assessment panel (TAP), a panel of scientific experts independent of NRW (see Section 6.3).

The existing Fitzroy WRP has documented flow objectives that provide for the water requirements of riverine ecosystems and processes in the amendment area. The link to the groundwater systems will be through the management of flows as they relate to surface water extraction and through the direct management of groundwater extractions.



Stockyard red gums

4.6 Managing water demand

The draft amendment will explore and identify the priorities and possible mechanisms for dealing with future water requirements. Any future proposal would be approved only if it were shown to be consistent with the range of outcomes defined in the Fitzroy WRP.

4.7 Water quality

Water quality assessments show that groundwater in the Isaac–Connors catchment is generally suitable for domestic use, stock watering and irrigation of most crops. The draft amendment will need to consider, to the extent possible under the Act, the quantity and quality of water needed for groundwater-dependent ecosystems. The draft amendment will need to establish strategies for managing how groundwater quality can be protected.

4.8 Tradable water entitlements

Wherever practicable, WRPs endeavour to convert existing entitlements to tradable water allocations. This is in accordance with the National Water Initiative, which shows a clear preference for tradability and the benefits that arise for water users and other stakeholders.

Traditionally, water entitlements were tied to the location at which supplies were taken and could not be sold separately from the land to which they were attached. This was seen as a hindrance to business flexibility and efficiency goals, such as the movement of water to high-value uses.

While these goals will be considered in developing the draft amendment, the lack of

detailed streamflow and water-use records that support creation of tradable entitlements may call for a different approach. If the data available does not satisfy modelling requirements, water trading may not yet be a viable option in the Isaac–Connors catchment.

4.9 Water use efficiency

Improved water use efficiency and innovation will be the first step to meeting the future demand on the groundwater resources of the Isaac–Connors catchment. Initiatives such as the Rural Water Use Efficiency Initiative, WaterWise and the Queensland Water Recycling Strategy have introduced strategies to help water users improve efficiency.

Significant gains are being made in the irrigation industry by adopting these strategies. Gains are also being made through improved water use monitoring using water meters, and improved irrigation scheduling. The potential reduction in demand for water resulting from these programs will be considered in preparing the draft amendment.

5. Consultation arrangements

5.1 Introduction

A key component of the water resource planning process is the consultation that occurs between the government and the community.

In developing the draft amendment, members of the community will have a formal opportunity to provide advice to the government through:

- submissions under the notice of intent about matters they would like the minister to consider in preparation of the draft amendment
- a community reference panel (CRP) formed during the development of the draft amendment to represent the cultural, environmental and economic interests in the proposed amendment area
- further submissions after the release of the draft amendment.

Additionally, the community will be able to contribute to the planning process at stakeholder meetings and information forums which will be held throughout the amendment area.

5.2 Proposed CRP model

The CRP brings together representatives of a diverse range of water resource issues to develop an understanding of the range of community views in the catchment.

The role of the CRP is to raise issues, provide advice and promote communication between the department, stakeholder groups and the regional community. During a series of meetings leading up to the release of the draft amendment, the CRP will assist with the development of management scenarios and evaluation of their impacts. The CRP also contributes to developing mitigation and management options for these impacts.

It is important to note that this panel is not a decision-making body, but that the feedback and advice it provides to the minister will play an important part in preparing the draft amendment.

5.3 Process for establishing the community reference panel

The minister will call for nominations from people interested in being a CRP member and information kits can be obtained from NRW (see Appendix F for details).

NRW will assess the applications against set criteria (see section 5.5) with the successful nominations expected to be committed for the full term of the planning process. Members of the CRP will ideally be selected from stakeholder and community groups within the Isaac–Connors catchment.

The following steps will be followed to ensure an open process is used in forming the CRP:

- the minister will advertise and invite expressions of interest for CRP nominations;
- nominations will be collated by NRW for preliminary assessment
- NRW will form an assessment and selection panel which will assess the nominations against the given criteria; note that selection panel members will be ineligible for CRP membership
- the selection panel will make a recommendation to the minister
- the minister will appoint and notify members
- successful nominees and the community will be notified of selections through a letter and a public advertisement.

NRW may also seek that representatives of other government agencies be invited to CRP meetings in a supportive and advisory capacity and the CRP would be expected to communicate with the invited agencies.

5.4 Indigenous consultation

It is proposed that traditional owners will have representation on the CRP. The nominated representatives would present the issues and concerns of traditional owners in relation to groundwater entitlements and resource management within the amendment area.

The comments and concerns raised during the consultation process with regard to traditional owners will be documented and considered as key inputs during the development of the draft amendment.

5.5 Criteria for selection

The CRP membership must include representatives of cultural, economic and environmental interests in the amendment area and will include representation from across the various geographic areas of the Isaac–Connors catchment with an interest in the groundwater resources of the basin.

Ideally, CRP nominees should:

- have an interest in the basin and its long-term health and the livelihoods of its people
- have the support and trust of the stakeholders they represent
- possess good communication skills and the ability to disseminate information
- have a demonstrated ability to think strategically and work with others
- be willing to commit the time necessary to meet regularly over the period of development of the amendment
- possess a willingness to recognise and positively discuss the many and sometimes conflicting issues involved in water allocation and management
- be able to develop an appreciation of how the catchment works though not necessarily possessing detailed technical skills.

5.6 Remuneration

Subject to prior approval, out-of-pocket expenses for accommodation and meals will be reimbursed in accordance with NRW Corporate Services Agency standards.

Other reasonable out-of-pocket expenses incurred by CRP representatives associated with costs of travel to meetings including transport will also be met (e.g. vehicle hire, fuel and economy airfares).

6.0 Technical assessments

A range of technical assessments will be performed to support the development of the draft amendment.

The main areas of technical assessment identified as a requirement to underpin the proposed amendment to the WRP are:

- groundwater system conceptual modelling
- environmental assessments of groundwater-dependent ecosystems
- groundwater system water balance and flow modelling
- social and economic assessments.

6.1 Hydrological conceptualisation

The development of the draft amendment requires a sound understanding of the groundwater system and the processes that may impact on the resource including water management and use practices.

An important tool for characterising the hydrology is the development of a robust conceptualisation model of groundwater resources in the Isaac–Connors catchment. The conceptual model attempts to capture all the hydrologic elements of the system, and provides the technical information that will be used later in the development of a groundwater system water balance and flow model. The hydrologic elements contributing to a typical groundwater system are shown in Figure 8. These elements will be the target of assessment in the development of a conceptual model of the Isaac–Connors groundwater system.

6.2 Water balance and flow modelling

The development of the draft amendment will require a sound understanding of groundwater hydrology, the impact these processes have on resource availability (e.g. groundwater in storage), and an assessment of the impacts of water management and use practices.

Groundwater system water balance and flow models are useful tools for hydrologic analysis and are developed using soils and climatic data, historical water levels, and recorded water usage to simulate groundwater-flow-related processes on a monthly time step. They are also used to simulate the impacts of groundwater

management and use practices on components of the water balance and on water levels.

It is important for models to be developed at the scale most appropriate to the task, so that the benefit of the information they generate is maximised. For water resource planning, regional rather than farm scale models are viewed as most suitable.

Water balance and flow models can be used to simulate a range of different water resource allocation options, including pre-development and existing conditions. The information provided by the model can then be used in technical assessments to determine the possible implications of the allocation options and the sharing of water between consumptive and non-consumptive use.

In consultation with the CRP, planning and management scenarios will be developed and their implications for water entitlement securities and groundwater-dependent ecosystems can be tested through a model. The outcome of these tests will inform preparation of the draft amendment.

6.3 Groundwater-dependent ecosystems

A primary objective of the water planning process is the protection and sustainability of groundwater dependent ecosystems (GDEs). Examples include groundwater dependent lagoons or wetlands, floodplain ecosystems and baseflow-dependent river systems.

A technical advisory panel (TAP) will be formed to provide advice relating to the environmental condition, importance and degree of dependency of GDEs within the amendment area. The TAP members will be expert individuals drawn from government agencies, universities, research organisations and consultancies.

Key areas of expertise required within the TAP include the following:

- aquatic ecology
- hydrogeology, groundwater hydrology and isotope hydrology
- riparian, terrestrial and wetland vegetation ecology or ecophysiology
- water quality.

Isaac–Connors catchment—information report

The advice provided by the TAP relates specifically to assessing the current environmental flow condition of groundwater-dependent ecosystems and their significance within the amendment area, and advising on environmental implications of various water allocation and management scenarios.

6.4 Social and economic assessments

The economic and social aspects of groundwater management in the Isaac–Connors catchment are important when considering

options for the management of the groundwater resource.

The first stage economic and social assessment in the catchment and subsequent and more extensive stage 2 economic and social assessment will provide the analyses to inform these considerations. NRW will work closely with other government agencies, the community reference panel and with a range of other stakeholders for the purpose of facilitating these analyses.



Stockyard macrophytes

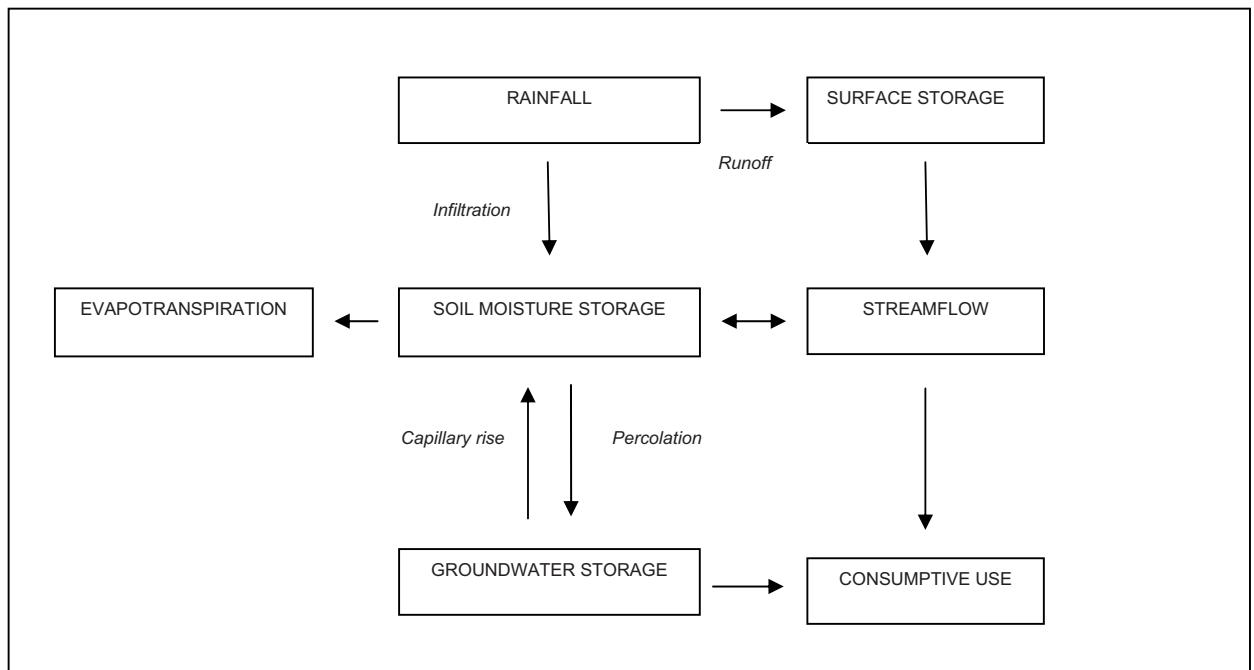


Figure 8: Hydrologic processes in a simplified conceptual model

Source: Adapted from Chadwick et al. 2004.

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Acronyms

CRP	community reference panel
NRMW	Department of Natural Resources, Mines and Water
TAP	technical advisory panel
WRP	water resource plan
OESR	Office of Economic and Statistical Research
GDE	Groundwater Dependent Ecosystem
ML	megalitre (1 000 000 litres)
NRW	Department of Natural Resources and Water

Glossary

Term	Definition
alluvial aquifer	A deposit of detrital material—mostly sediment—formed by river, stream and floodplain processes that store and transmit water in the spaces between sediment grains. Stored water can be extracted and used.
ecosystem	The sum of everything pertaining to ecology at a location. This includes physical habitats and organisms. Groundwater-dependent ecosystems are ecosystems that derive some or all of their water requirements from groundwater.
environmental flow objective	For a water resource plan, means a flow objective for the protection of the health of natural ecosystems for the achievement of ecological outcomes.
overland flow water	Water that runs off land following rainfall, either before it enters a watercourse or after it discharges as floodwater from a watercourse or lake.
resource operations plan	A statutory plan under the <i>Water Act 2000</i> that details how the objectives identified in a water resource plan are to be achieved. Where necessary, a resource operations plan will establish the rules for trading. A resource operations plan will address how water use will be managed, how additional water can be allocated and how water infrastructure is to be managed. A resource operations plan will also specify practices and responsibilities for monitoring water and aquatic ecosystems.
recharge	The water contributions to an aquifer from various processes.
stakeholder	Any individual or group with an interest (stake) in an issue. In addition to all community groups and individuals within the draft plan area, this could include peak bodies, conservation and Landcare groups at State and national levels, government (local, State and federal), industry, government-owned corporations and research and academic institutions.
water entitlement	A water allocation, interim water allocation or water licence.

Appendix A: Public notice

Notice of Intent

To amend Water Resource (Fitzroy Basin) Plan 1999

Water Act 2000

(Section 40)

Isaac River and Connors River catchment

1. Notice

This notice of the intention to amend the *Water Resource (Fitzroy Basin) Plan 1999* (the Plan) by the preparation and publication of an amending water resource plan (Amending WRP) is given by the Minister for Natural Resources and Water (the Minister) under Section 40 of the *Water Act 2000* (the Act).

2. Intention to Amend *Water Resource (Fitzroy Basin) Plan 1999*

Under section 38(5) of the Act, a water resource plan must regulate the taking of subartesian water if the Minister is satisfied that –

- (a) if there is an existing water resource plan – there is a risk that taking, or interfering with, subartesian water in the area may significantly impact on the plan’s outcomes; or
- (b) there is a risk that the taking, or interfering with, subartesian water in the area may significantly affect –
 - i. the availability of water for existing water entitlement holders; or
 - ii. the water requirements of natural ecosystems; or
 - iii. the quality of water.

The Minister is satisfied that some or all of the above risks exist in relation to subartesian water in that part of the area of the Plan comprising the Isaac River and the Connors River catchment.

The Minister intends to amend the Plan to regulate the taking of subartesian water within the Isaac River and the Connors River catchment.

3. Area subject to Plan amendment

The area for which the Minister intends to amend the Plan (the proposed plan area) is the Isaac River and the Connors River catchment as shown in the map contained in this Notice.

The Map of the area contained in this Notice is indicative only. The exact location of the boundaries of the area is held in digital electronic form by the Department of Natural Resources and Water. The Map may be viewed at the Department’s Rockhampton office at 209 Bolsover Street, and Mackay office at 22-30 Wood Street.

4. Water subject to intended Plan amendment

The water for which the Minister intends to amend the Plan is sub-artesian water in the Isaac River and the Connors River catchment.

5. Information Report

Pursuant to section 39 of the Act, the Minister has prepared an information report about water allocation and sustainable management issues in the proposed plan area in the Isaac River and the Connors River catchment.

The report also details arrangements proposed for:

Isaac–Connors catchment—information report

- (a) establishing a Community Reference Panel to provide advice about matters relevant to the Plan amendment; and
- (b) the technical assessment of subartesian water in the area of the intended Plan amendment.

Copies of the report may be obtained by contacting the Department of Natural Resources and Water on telephone 1800 822 100 during business hours on business days. The report may be viewed or downloaded via the Internet from: www.nrw.qld.gov.au/wrp/isaacconnors.html and at the Department’s Rockhampton office at 209 Bolsover Street, and Mackay office at 22-30 Wood Street. Copies of the report will also be available from local government offices in the area.

6. Submissions

Any person may make a submission about the Minister’s proposal to prepare an Amending WRP and the establishment of a Community Reference Panel.

Properly made submissions must be:

- made in writing,
- state the name and address of the person or persons making the submission,
- be signed by the person or persons making the submission, and
- state the grounds of the submission and the facts and circumstances used to support the grounds.

Submissions must be lodged at one of the following addresses no later than 5 pm on the 23rd February 2007.

POSTAL ADDRESS

The Chief Executive
(Attention: Mr. Ed Donohue)
Department of Natural Resources and Water
PO Box 1762
ROCKHAMPTON QLD 4700

STREET ADDRESS

The Chief Executive
(Attention: Mr. Ed Donohue)
Department of Natural Resources and Water
Level 2/209 Bolsover St
ROCKHAMPTON QLD

Email: isaacconnors.wrp@nrw.qld.gov.au

Web: www.nrw.qld.gov.au/wrp/isaacconnors.html

All submissions will be treated with sensitivity and wherever possible in confidence.

However, submissions may be viewed by other parties under provisions of the *Freedom of Information Act 1992*.

7. Public Information Sessions

Public information sessions concerning the intended Plan amendment will be held at different locations throughout the area to which the amendment relates. Details of the initial information sessions are:

DATE	VENUE	TIME
Wednesday, 20 December 2006	Clark Creek Hall	2.00 pm
Wednesday, 20 December 2006	Nebo Shire Hall	7.30 pm

Persons intending to attend these sessions should contact the Department of Natural Resources and Water on 1800 822 100 to register interest for the session at which attendance is proposed.

8. Nominations for Community Reference Panel

Isaac–Connors catchment—information report

Under Section 41 of the Act, the Minister must establish a Community Reference Panel. The purpose of the Panel is to provide a forum for consultation and communication between the community and the Department of Natural Resources, Mines and Water in the course of the preparation of the Amending WRP.

The panel must include, but is not limited to, representatives of cultural, economic and environmental interests in the proposed plan area. The Panel will meet periodically to identify issues, review information and provide input and advice throughout the development of the Amending WRP.

The Minister seeks expressions of interest from community members interested in serving on the Panel for the proposed amendment of the Plan described in this Notice.

A nomination kit, containing the Terms of Reference for selecting Community Reference Panel members and a nomination form that must be completed as part of the nomination and selection process, will be sent to all parties who lodge an expression of interest. All nominees must be nominated through this process.

Nominations must be received on or before 5:00 pm, 23 February 2007.

Persons wishing to lodge an expression of interest in selection for the Panel may obtain a nomination kit by contacting—

Roland Lee, Senior Planning Officer

Department of Natural Resources and Water

Phone: (07) 1800 822 100

Fax: (07) 4938 4011

Mail: PO Box 1762, Rockhampton 4700

E-mail: isaacconnors.wrp@nrw.qld.gov.au

**Alternatively, the nomination kit can be viewed or downloaded via the Internet from—
www.nrw.qld.gov.au/wrp/isaacconnors.html**

Dated this 15th day of December 2006

Craig Wallace

Minister for Natural Resources and Water

Appendix B: Moratorium notice

Moratorium Notice

Water Act 2000

(Section 26)

Isaac River and Connors River catchment

1. This is a Moratorium Notice (Notice) under section 26 of the *Water Act 2000* for the Isaac and Connors Rivers Catchment (the Area) as identified in administrative plan AP 14807.

The map of the Area in this Notice is indicative only. The exact location of the boundary of the Area is held in digital electronic form by the Department of Natural Resources and Water and may be inspected at the Department's Rockhampton office at 209 Bolsover Street, and Mackay office at 22-30 Wood Street.

2. This Notice has effect on and from 15 December, 2006.
3. This Notice applies, in the Area, to:-
 - (a) subartesian water in the alluvial aquifers in the unconsolidated Quaternary deposits in the Area associated with the Isaac River, the Connors River and all tributaries of those Rivers; and
 - (b) for that part of the Area that is declared as the Highlands Subartesian Area – to all applications for or about water licences to take the subartesian water mentioned in paragraph (a), whether made before or after this Notice is published; and
 - (c) for that part of the Area that is undeclared (outside the Highlands Subartesian Area) - works to take the subartesian water mentioned in paragraph (a).

The areas referenced in paragraphs (b) and (c) areas are shown indicatively in the map of the Area in this notice. The exact boundaries of the respective areas are held in digital electronic form and may be inspected at the Department's Rockhampton office at 209 Bolsover Street, and Mackay office at 22-30 Wood Street.

4. For applications mentioned in section 3 (b) of this notice that would, if granted, increase the amount of water that may be taken:
 - (a) new applications will not be accepted; and
 - (b) applications already accepted as at 15 December 2006 will not be dealt with.
5. Clause 4 of this Notice does not apply to an application:
 - (a) to take subartesian water for the following purposes provided that there is no other suitable water supply available to the applicant:
 - i) for Town Water Supply; or
 - ii) for the construction, operation, or maintenance of public assets and utilities; or
 - iii) for mining purposes, to the extent only that the application relates to the taking of water for dewatering purposes; or
 - iv) for a significant project declared under Section 26 of the *State Development and Public Works Organisation Act 1979*.

Isaac–Connors catchment—information report

- (b) to renew, reinstate or replace a water licence under Sections 220, 221 or 229 of the *Water Act 2000*;
 - (c) for a water licence to re-authorise the taking of water for which an application was not otherwise made under section 220 or 221 of the *Water Act 2000* and in relation to which works were installed and operable on the 15 December, 2006.
6. A person must not start the construction of works, or continue to construct works in contravention of Clause 7 of this Notice. A contravention of Clause 7 of this Notice is an offence under Section 26(6) of the *Water Act 2000* and renders a person liable to a maximum penalty of 1665 penalty units.
7. For works mentioned in section 3(c) of this Notice that would increase the amount of water being taken or that could be taken:
- (a) new works must not be physically started;
 - (b) completed works in existence must not be raised enlarged, deepened or changed;
 - (c) works that have been started may continue, provided that
 - i. the person who is completing works gives the chief executive notice about the works by 19 January 2007;
 - ii. the works are completed by 23 February 2007.

Notice of physically started works should be given in writing to the chief executive at the Department’s Rockhampton office, 209 Bolsover Street, Rockhampton.

8. Clause 7 of this Notice does not apply to works:
- (a) to take water for
 - i. Town Water Supply; or
 - ii. stock purposes; or
 - iii. domestic purposes; or
 - iv. the construction, operation, or maintenance of public assets and utilities; or
 - v. mining purposes, to the extent that the water is to be taken only for dewatering purposes; or
 - vi. a significant project declared under Section 26 of the *State Development and Public Works Organisation Act 1979*; or
 - (b) if the works are to replace existing works, provided that:
 - i) the replacement works are no deeper than the existing works; and
 - ii) the replacement works are located within 10 metres of the existing works being replaced; and
 - iii) the existing works that are replaced are properly decommissioned immediately upon the completion of construction of the replacement works.
9. In this Notice:
“**subartesian water**” means subartesian water that occurs naturally in, or is introduced artificially into an aquifer, which if tapped by a bore, would not flow naturally to the surface as defined in Schedule 4 of the *Water Act 2000*;

Information about plans

The administrative plans defining the exact location of the boundary of the Isaac and Connors River Alluvium to which this Notice applies are held in digital electronic form by the Department of Natural Resources and Water and may be inspected at the department’s Mackay office at 22-30 Wood Street, and Rockhampton office at 209 Bolsover Street.

For further information on this Notice, contact:

Andrew Rosser

Department of Natural Resources and Water

PO Box 63

Mackay QLD 4740

Telephone: (07) 4967 0871

Facsimile: (07) 4944 0896

Alan McDonald

Department of Natural Resources and Water

PO Box 1762

Rockhampton QLD 4700

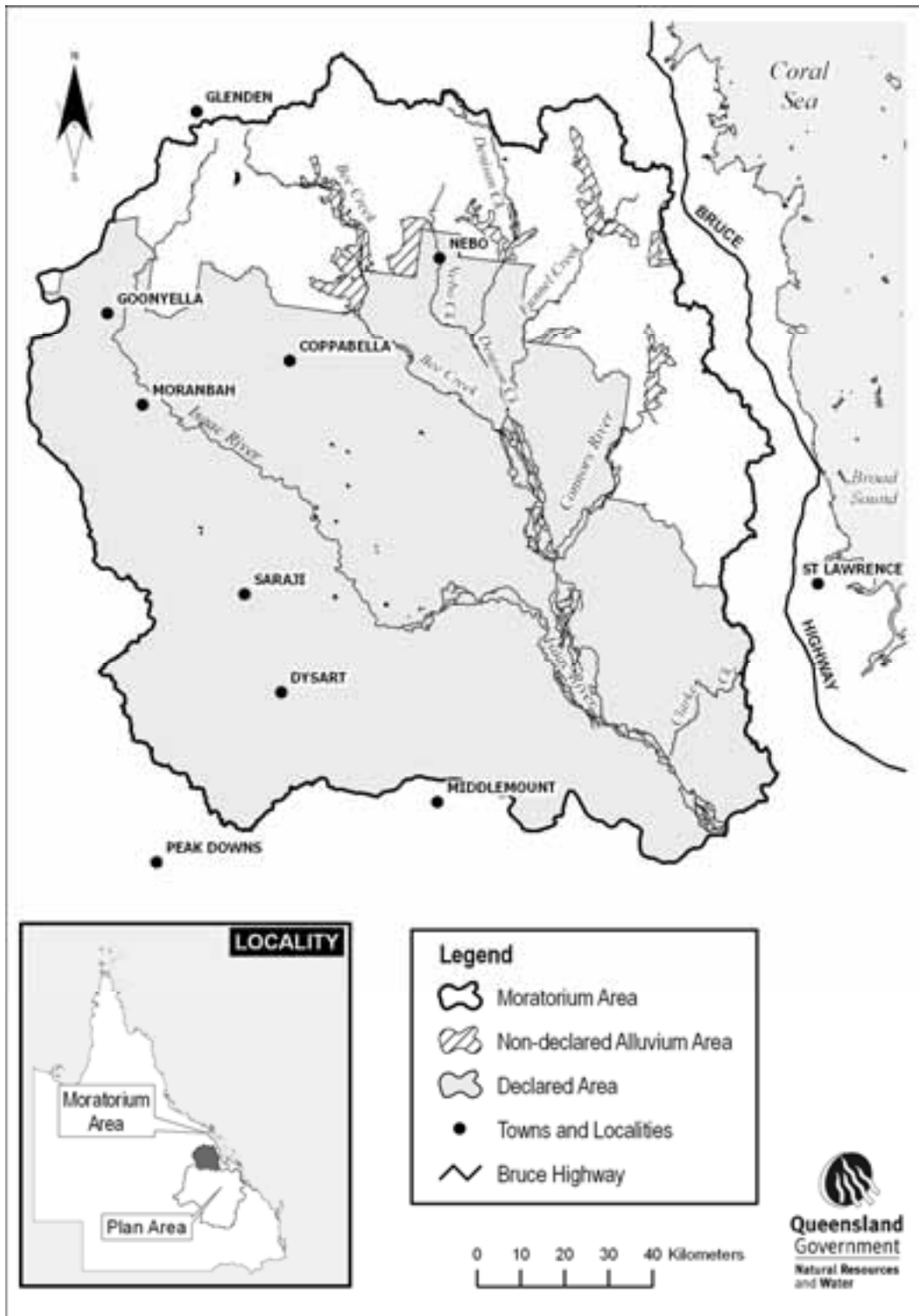
Telephone: (07) 4938 4947

Facsimile: (07) 4927 3079

Dated this 15 day of December 2006

Craig Wallace

Minister for Natural Resources and Water



Appendix C: Rainfall trends

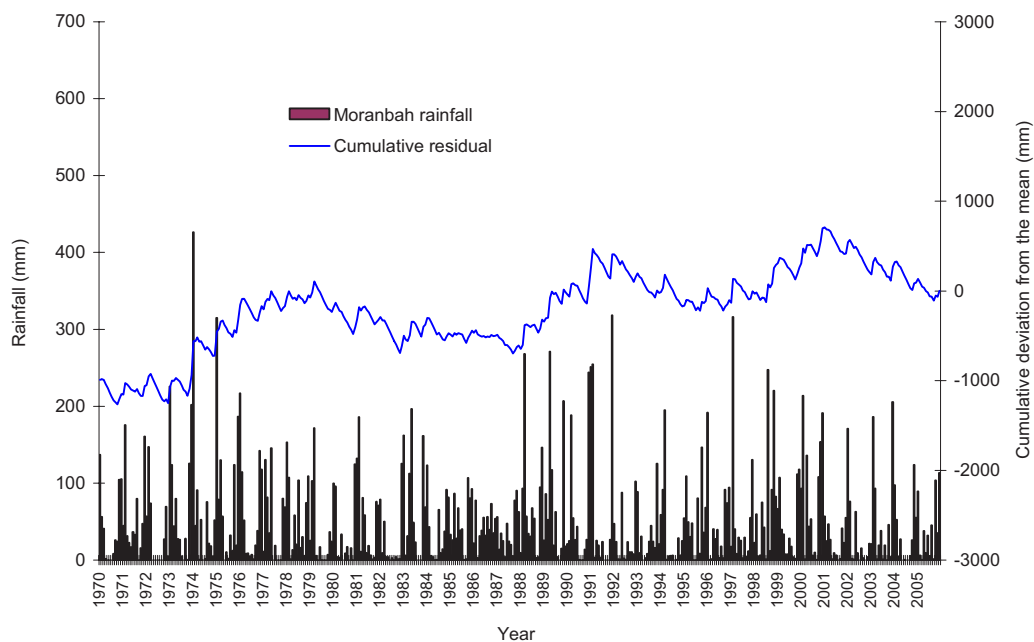


Figure 1: Plot of monthly rainfall and precipitation trends as cumulative deviations from the mean for the period 1970–2005 at Moranbah

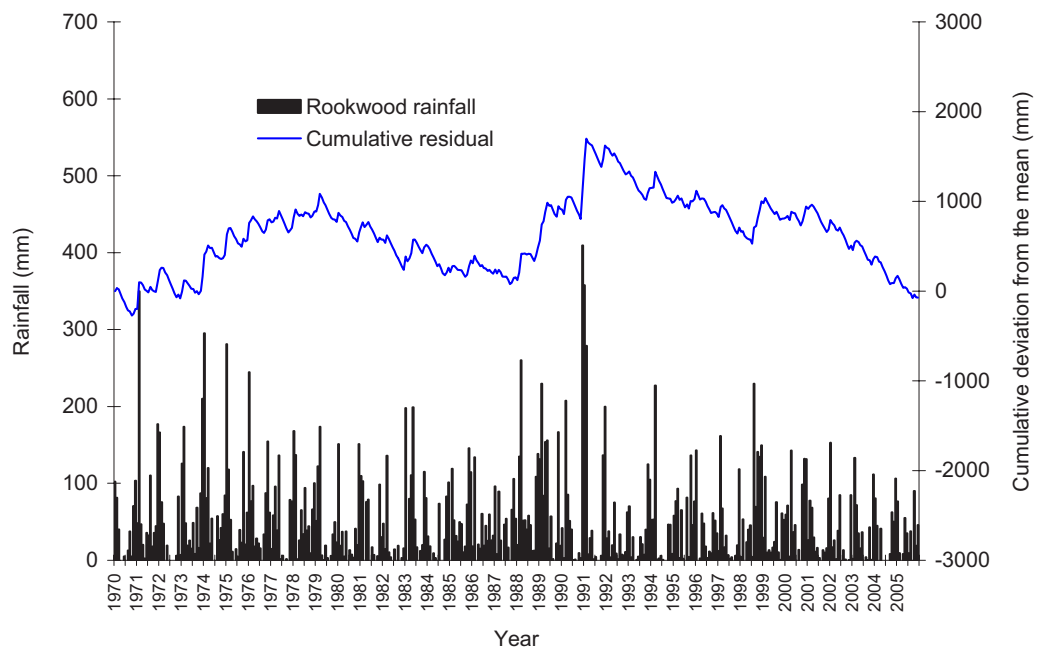


Figure 2: Plot of monthly rainfall and precipitation trends as cumulative deviations from the mean for the period 1970–2005 at Rookwood

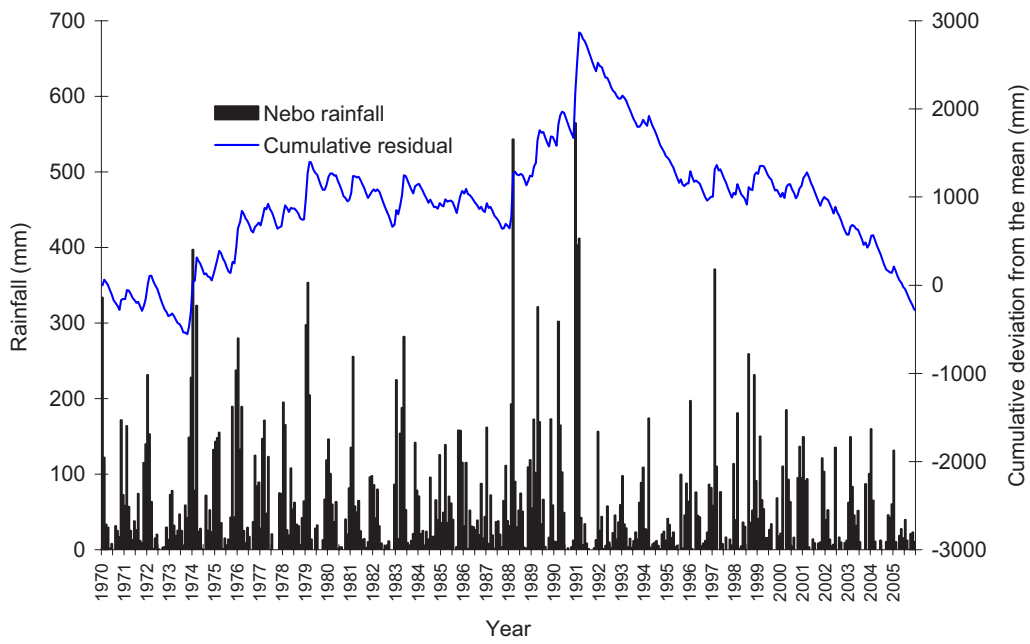


Figure 3: Plot of monthly rainfall and precipitation trends as cumulative deviations from the mean for the period 1970–2005 at Nebo

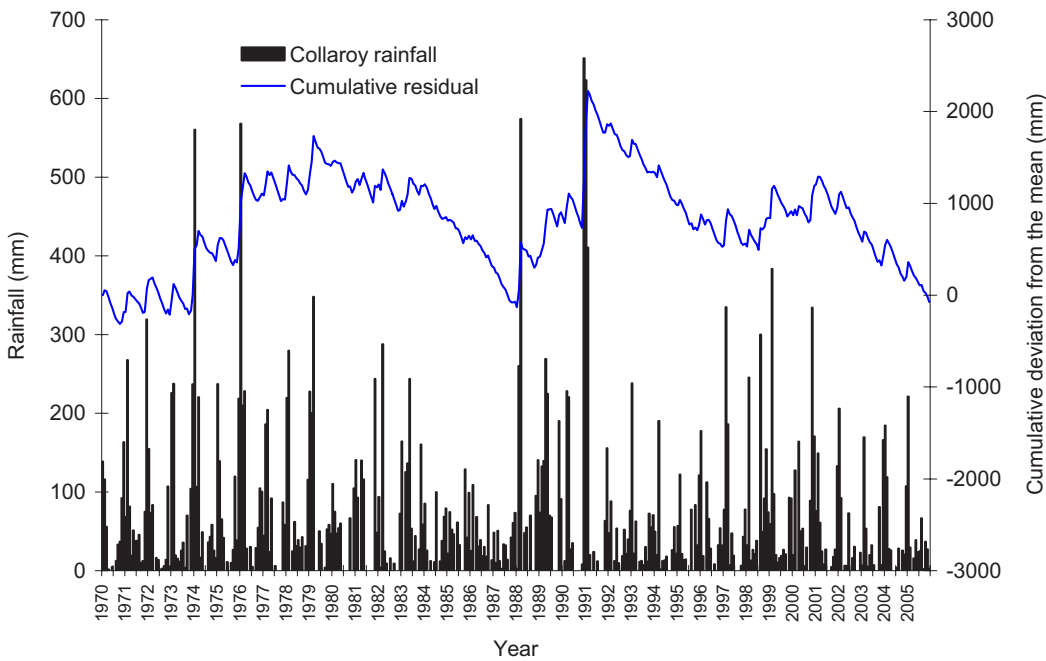


Figure 4: Plot of monthly rainfall and precipitation trends as cumulative deviations from the mean for the period 1970–2005 at Collaroy

Appendix D: Summary of land use statistics for the major local government areas in the Isaac–Connors catchment

Major land user	Area (ha)			Value of production (\$)		
	Belyando	Broadsound	Nebo	Belyando	Broadsound	Nebo
Agriculture						
Irrigated cropping	1397	2 588	1 406	n/a	na	na
Crop/pasture rotation	2908	16 929	1 887	na	na	na
Permanent cropping	174 028	53 840	27 199	51.5m	15.5m	na
Grazing	2 708 783	1 660 199	882 417	65.9m	47m	30.5m
Total	2 887 116	1 733 556	912 909	77m	75m	32.3m
State forests ¹	22 038	8 592	22 165	na	na	na
National park	20 704		46 323	na		na
Managed protected areas (MPA) ²	66 284	85 406	16 771	na	na	na
Mining	16 186	8 297	446	2.2b	333m	297.1m
Urban/industry	4911	9 268	1 300	na	na	na
Notes:						
<p>1. The area under forestry includes only state forests.</p> <p>2. MPA includes areas that fall within permanent cropping and crop/pasture areas not actually part of the dominant land use classification e.g. riparian vegetation or a rocky outcrop that would be impossible or at least very difficult to utilise. The NLWRA information includes land categorisation ‘conservation’ which has been included in the MPA.</p>						
Source: National Land and Water Resources Audit, 1997						



Submission form

We appreciate your interest in the planning process and value your input. This submission form will help you to identify the concerns you would like addressed. We ask that you identify yourself so that we may respond to your submission and contact you for future consultation, if you so desire.

Please note that it is not compulsory to answer all questions. However, your name and address, signature, grounds of the submission, and facts in support of the submission must be provided for it to qualify as a properly made submission. All properly made submissions received will be acknowledged and information gathered will be taken into consideration in the development of the draft amendment.

Surname (Mr/Mrs/Ms/Dr/Other)	
First name	
Address	
Postcode	Fax
Organisation	
Position	
Phone no.	Mobile
Email	
Signature 1	Date
Signature 2*	Date

*If necessary, e.g. for an organisation.

Which interest group do you primarily represent? Number relevant boxes in ascending order where (1) represents your primary interest.

<input type="checkbox"/> Irrigator (surface water)	<input type="checkbox"/> Riparian landholder	<input type="checkbox"/> Research/academic
<input type="checkbox"/> Irrigator (groundwater)	<input type="checkbox"/> Horticultural interests	<input type="checkbox"/> Tourism industry
<input type="checkbox"/> Dryland farmer	<input type="checkbox"/> Local government	<input type="checkbox"/> Commercial fisher
<input type="checkbox"/> Grazier	<input type="checkbox"/> Stock and domestic water user	<input type="checkbox"/> Recreational fisher
<input type="checkbox"/> Mining industry	<input type="checkbox"/> Environmental interests	<input type="checkbox"/> Small business
<input type="checkbox"/> Water service provider	<input type="checkbox"/> Commerce/development	<input type="checkbox"/> NRM board/catchment
<input type="checkbox"/> Community group (please specify)	<input type="checkbox"/> Indigenous community (clan linkage)	<input type="checkbox"/> Industry group (please specify)
.....
.....
<input type="checkbox"/> Other (please specify)		



If you are the representative of a community or stakeholder group, please name the group and briefly outline its purpose.

What is the source of the water you use and what do you use water for? (You may tick more than one box.)

	Council supply	Water in streams or creeks	Surface water storage (e.g. farm dam)	Subartesian water
Domestic (household)				
Stock				
Irrigation				
Recreational				
Industrial				
Tourism				
Farming				
Other (please specify)				

What are the important issues you think should be considered in the development of a water resource plan amendment and why?

Do you have any other matter you wish to comment on in relation to information contained in this report? Please refer to specific section(s) of this information report.

Number of additional pages attached to this submission form

Thank you for your contribution.



Appendix F: Community reference panel nomination Form

Isaac–Connors catchment WRP draft amendment

Please send your completed registration form to:
Isaac–Connors catchment draft WRP amendment
Community Reference Panel Registration
Department of Natural Resources and Water
PO Box 1762
Rockhampton Qld 4700
Fax: (07) 4938 4011

When completing this form, please print your information clearly.

Your personal details

Mr/Mrs/Miss **First name**

Surname

Special dietary requirements

Other information

.....

.....

Your correspondence details

Postal address:.....

..... **Postcode**

Phone (work)..... (mobile).....

(home) **Email**

Please indicate how you would prefer to receive you correspondence by numbering the boxes below in order of preference from 1 to 3.

Email

Facsimile

Post

Details of your proxy

In the event that you cannot attend a CRP meeting, it is desirable that you nominate a suitable proxy to attend in your absence.

Mr/Mrs/Miss **First name**

Surname.....

Postal address

..... **Postcode**

Phone

(work)..... (mobile).....

(home)..... **Email**

Addressing selection criteria

Please provide a brief written application addressing how you meet the following criteria.

1. Demonstrated capacity to commit the time to the process.
2. A broad knowledge of water planning and current water reform issues or a demonstrated ability to rapidly acquire knowledge and apply that in decision-making processes.
3. Demonstrated ability to represent interest groups and capacity to communicate effectively, and to disseminate and gather information to and from the relevant sector.
4. Ability to work in a diverse group with people of varying values, interests, ages and views.
5. Demonstrated support of relevant stakeholder category (Where possible, applicants should provide details of referees who may verify this support)

Signature **Date** / /

