Warrego-Paroo-Nebine Water Resource Plan

Provided for accreditation under
Section 63 of the *Water Act 2007* (Commonwealth)

November 2016

Queensland Government

This publication has been compiled by Water Policy South, Department of Natural Resources and Mines.

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1 Introduction

This document and its package of supporting instruments and texts constitute the Warrego–Paroo–Nebine Water Resource Plan (Water Resource Plan). It is the key instrument to implementing the outcomes of the Murray–Darling Basin Plan 2012 (Basin Plan) in the plan area, and it is the first such plan in the Queensland Murray–Darling Basin to be prepared.

Section 63 of the *Water Act 2007* (Cth) requires a Basin State to prepare a water resource plan for each of its water resource plan areas for accreditation. This Water Resource Plan is provided to the Murray–Darling Basin Authority for assessment and for preparing recommendations to the Minister of Agriculture and Water Resources on whether the Water Resource Plan should be accredited.

The Water Resource Plan sets out water management arrangements for surface water and groundwater to share water for consumptive use and to meet environmental and water quality objectives. In doing so, it builds on the Queensland statutory water planning arrangements, including the Water Resource (Warrego, Paroo, Bulloo and Nebine) Plan 2016 (the Queensland WRP), which was developed in consultation with key stakeholders and regional communities.

1.1 Overview of the Water Resource Plan

The Water Resource Plan addresses the requirements of Chapter 10 of the Basin Plan and consists of two main parts as follows:

1. This document which is the main document for the Water Resource Plan, including a summary of how the Basin Plan requirements are addressed and an index which gives the line-by-line details and identifies the instruments and texts (or sections thereof) that constitute the Water Resource Plan.
2. A package of instruments and texts referred to in the index, some of which contain clauses for accreditation and some of which provide supporting information. The package is provided electronically to the Murray–Darling Basin Authority.

The following table outlines the contents of this document.

Table 1: Contents of Warrego-Paroo-Nebine Water Resource Plan

Chapter	Description
1: Introduction	Purpose of the Water Resource Plan
2: The Warrego–Paroo–Nebine Water Resource Plan area	A description of the Water Resource Plan area, water resource development and water for the environment.
3: Queensland's water planning frameworks	An overview of Queensland's planning frameworks for the allocation and management of water resources under the *Water Act 2000* (Qld) and for managing water quality and protecting the environment under the Environmental Protection (Water) Policy 2009. It includes the risk-based planning approach.
4: Summary of the Water Resource Plan	A plain English summary of how the Water Resource Plan addresses each part of Chapter 10 of the Basin Plan.
5: Index	The line by line provisions for addressing each part of Chapter 10 of the Basin Plan including the Queensland instruments and texts (or sections thereof) to be accredited and explanatory notes.
Appendices A — H:	Additional information addressing or supporting the Basin Plan requirements for the Water Resource Plan.

2 The Warrego–Paroo–Nebine Water Resource Plan area

2.1 Description of the plan area[1]

The Water Resource Plan area is located in South West Queensland and encompasses three surface water and three groundwater sustainable diversion limit (SDL) resource units, as shown in Figures 1 and 2. The major watercourses in the plan area are the Warrego River, Paroo River and Nebine Creek which flow across the state border into New South Wales.

The three groundwater SDL resource units in the plan area consist of aquifers above the Great Artesian Basin (GAB). Development of these aquifers is low and primarily used for stock and domestic purposes. Groundwater from the Great Artesian Basin is used for town water supply throughout the area but it is not a resource managed under the Basin Plan.

It should be noted that the Queensland WRP includes the neighbouring Bulloo catchment, as shown in Figure 1, as it has similar water management policies to the other catchments. However, it is not part of the Water Resource Plan area as it is a terminal system and disconnected from the Murray–Darling Basin. Similarly, the Basin Plan recognises the St George Alluvium groundwater aquifers in the Water Resource Plan area as being one SDL resource unit—these are two disconnected aquifers and are managed separately under the Queensland WRP.

The plan area experiences a semi-arid climate with highly variable rainfall, high temperatures and high evaporation rates. The topography is predominately flat and the rivers have intermittent and highly variable flows i.e. a 'boom-bust' flow regime. The main land use is grazing, with the remainder being for conservation, small-scale irrigation and small urban centres.

The population of the plan area is approximately 7,500, with a stable population projected till 2031. The major towns are Charleville and Cunnamulla. Over 20 per cent of workers are employed in agriculture, although this is declining over time. Tourism is a small but growing industry, with tourist attractions including natural assets such as Currawinya Lakes and the Paroo River wetlands.

Around 15 per cent of the population identifies as Aboriginal. The area contains a number of wetlands, rivers and waterholes, which are culturally significant to local Aboriginal people.

[1] Information in this section is derived from:
Department of Natural Resources and Mines (DNRM) (2014a), *Warrego, Paroo, Bulloo and Nebine draft Water Resource Plan and amended resource operations plan*: *Overview report*, State of Queensland, September 2014
DNRM (2014d) *Warrego, Paroo, Bulloo and Nebine draft Water Resource Plan and amended resource operations plan*: *Socio-economic assessment,* State of Queensland, April 2014.
Department of Science, Information, Technology, Innovation and the Arts (2013a) *Review of Water Resource (Warrego, Paroo, Bulloo and Nebine) Plan 2003 and Resource Operations Plan: Environmental Assessment Report Stage 2,* State of Queensland, October 2013

Figure 1: Map of Warrego-Paroo-Nebine surface water SDL resource units

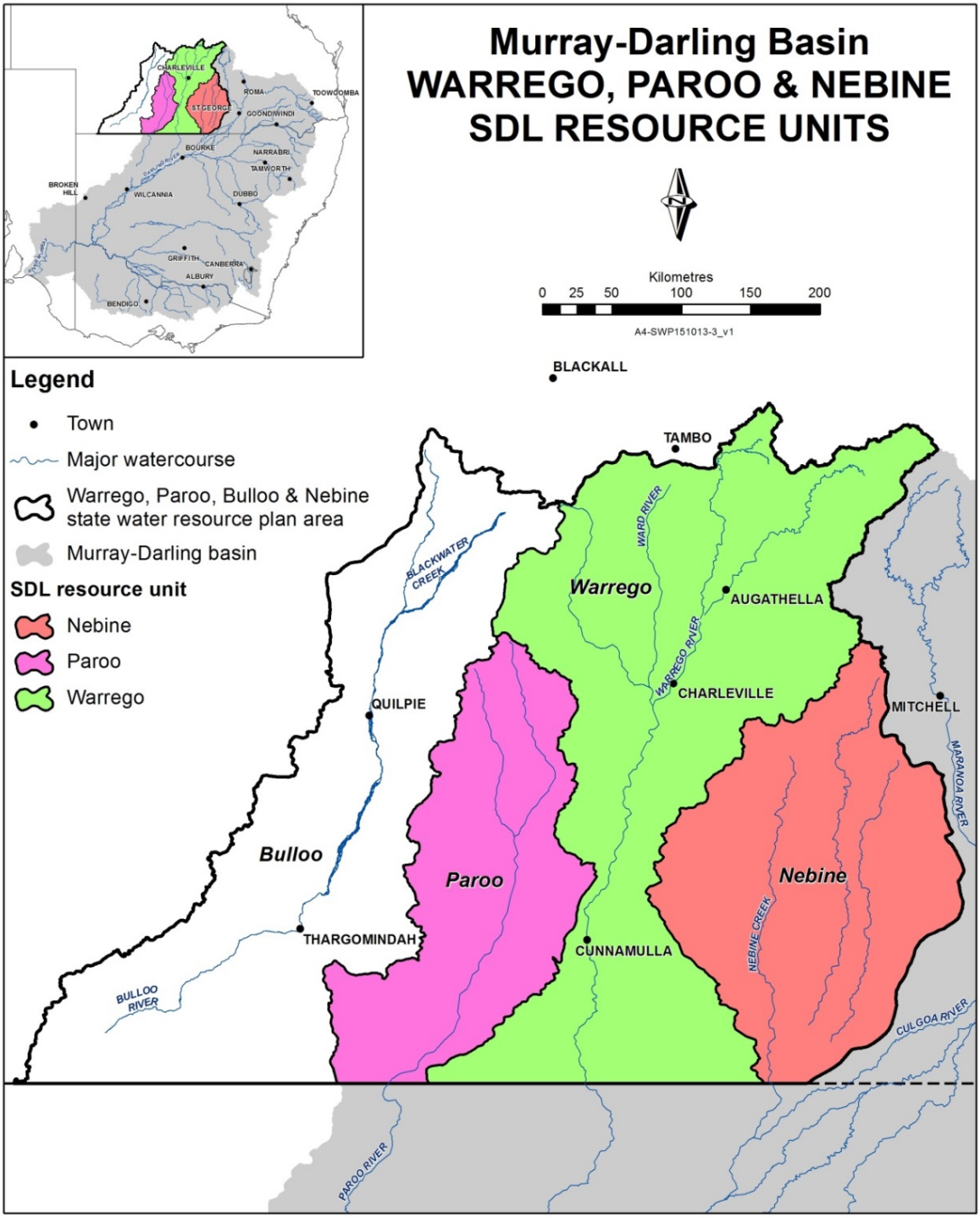
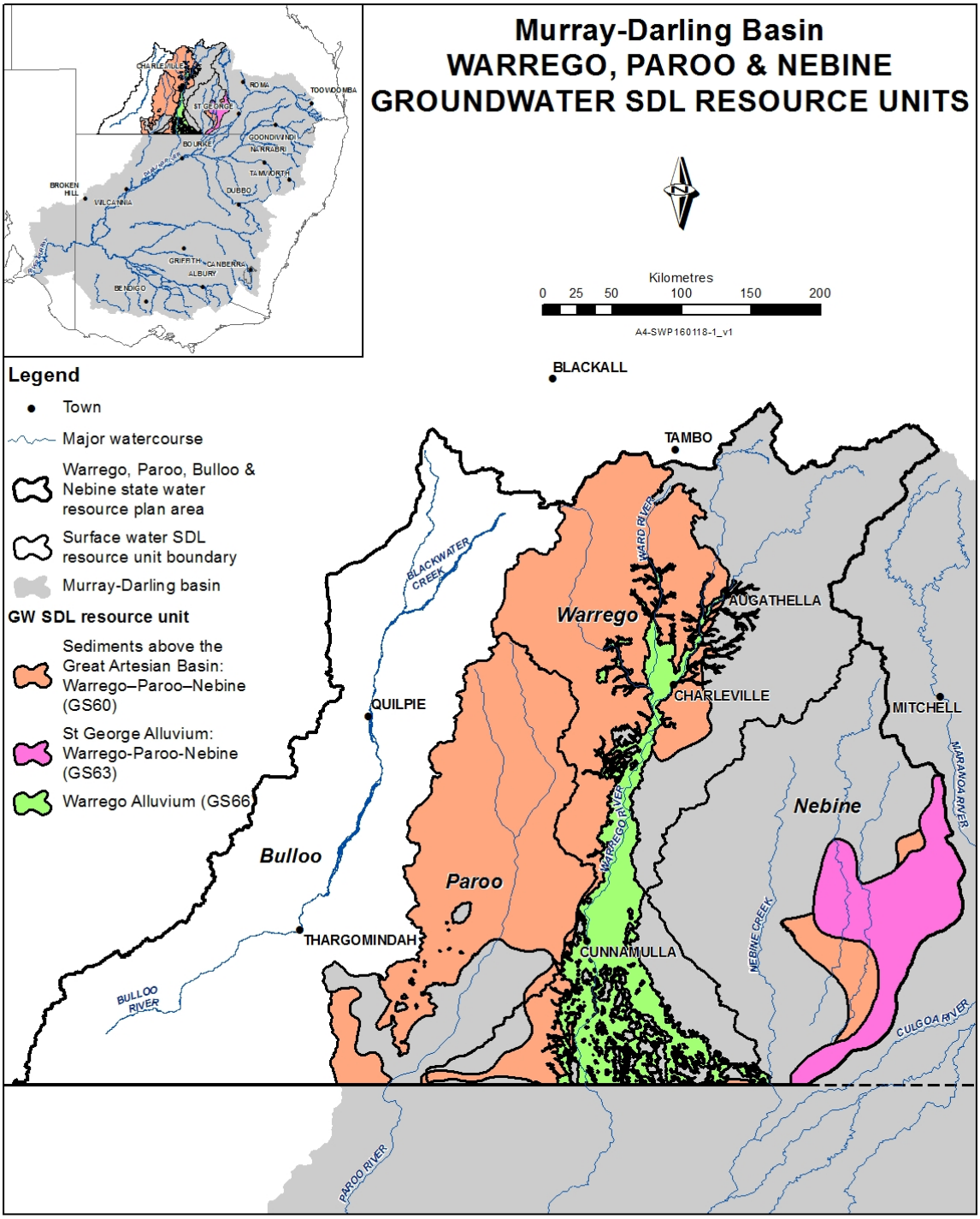


Figure 2: Map of Warrego-Paroo-Nebine groundwater SDL resource units



2.2 Water resource development in the plan area

The variable nature of the water resource has contributed to the low levels of water resource development in the plan area. In the Paroo catchment, mean annual end-of-system flow under full usage of entitlements is estimated to be just 1 per cent less than the flows experienced in the system prior to any water resource development. Similarly for the Warrego and Nebine catchments, flows are estimated to be 11 and 13 per cent less respectively. Environmental risk assessments conducted as part of the review of the Water Resource (Warrego, Paroo, Bulloo and Nebine) Plan 2003 found that surface water ecological assets were at low risk from water resource management activities in the area.

Streamflows are mostly unregulated and the main form of water diversion is by water harvesting from flows as they naturally occur. These are generally stored in on-farm storages which may also capture overland flows from the floodplains during flood events.

There are 43 unsupplemented water allocations in the Warrego catchment, 5 in the Nebine catchment and 2 on the Paroo River, with a total long term annual average take of less than 43 gigalitres (GL) per year. There are also 26 surface and groundwater licences (attached to land) with a long term annual average take of 5.1 GL per year.

Instream storages are not significant and there is only one supplemented (regulated) water supply scheme in the plan area. SunWater manages the Cunnamulla Water Supply Scheme on the Warrego River. Its storage infrastructure is the Allan Tannock Weir (capacity 4.8 GL), which supplies water to the town of Cunnamulla and local irrigators. A total of 28 supplemented allocations are provided a long term annual average volume of take of 2.5 GL per year through the Cunnamulla Water Supply Scheme.

2.3 Water for the environment in the plan area

The largely unregulated nature of the Water Resource Plan area means that there is very limited scope for actively managing or releasing water from storages for environmental purposes. Water is provided for the environment primarily through limiting water users' access to streamflow as it naturally occurs. This is achieved through the access conditions on the water entitlements as well as rules and arrangements in the water planning framework. This rules-based approach (or planned environmental water) provides long-term security to identified flow-dependent environmental assets and ecosystem functions while at the same time providing security to consumptive water entitlements.

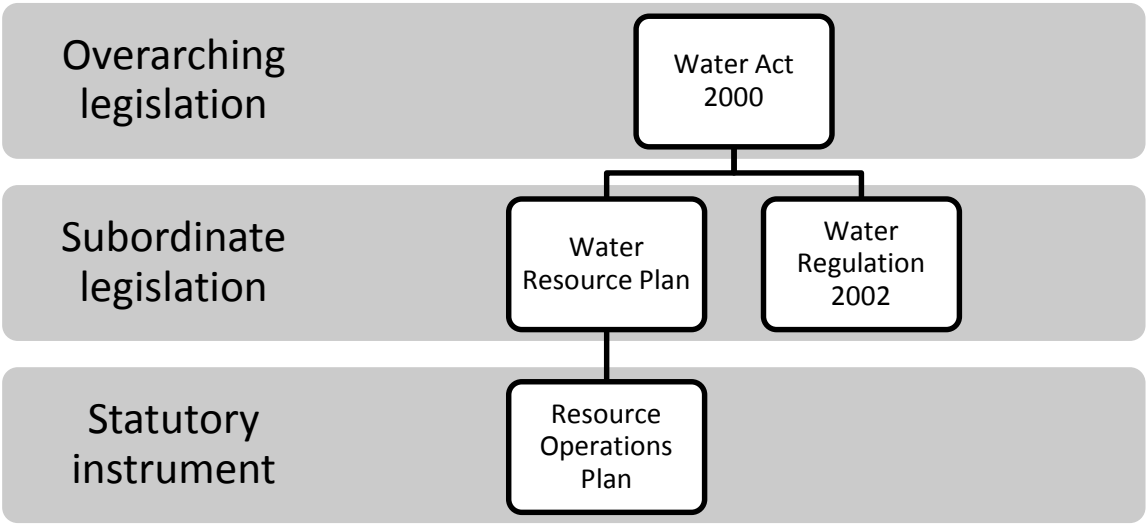
The first Queensland WRP (finalised in 2003) established a reserve of unallocated water to be released for economic development. In 2010, the Queensland Government gifted these water entitlements to the Australian Government to meet local environmental watering needs. The gifted water entitlements in the Water Resource Plan area comprise 8 GL in the Warrego and 1 GL in the Nebine. There have been no other processes, e.g. buyback, to recover water for the environment in the plan area. The Commonwealth Environmental Water Holder (CEWH) is the sole owner of held environmental water (HEW) in the Water Resource Plan area. The HEW consists of unsupplemented (unregulated) entitlements.

3 Queensland's water planning framework

3.1 Water allocation and management

The *Water Act 2000* (Qld) establishes a planning framework for the allocation and management of water across Queensland. The framework specifies strategic water resource planning provisions to meet economic, social, cultural and ecological outcomes for water in the relevant catchment area. The Queensland water planning framework is comprised of four key components as shown in Figure 3.

Figure 3: The Queensland water resource planning framework



The water planning framework consists of:

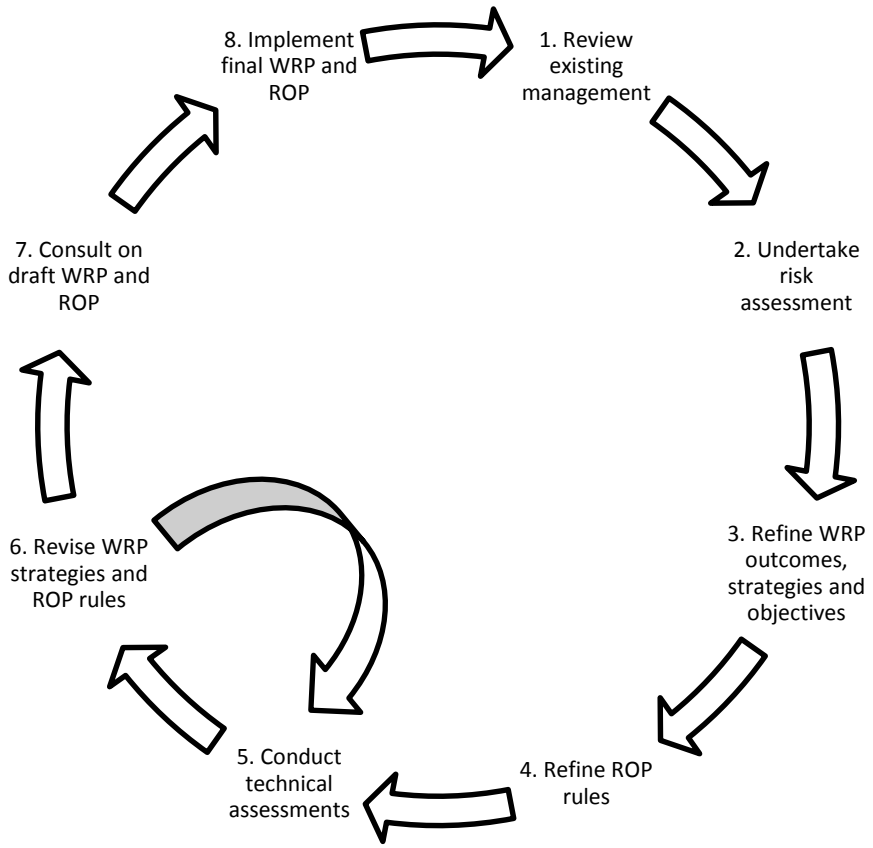
- The *Water Act 2000* (Qld) which includes provisions to develop water resource plans and resource operations plans for the sustainable management of water resources. The *Water Act 2000* (Qld) also requires decisions about water management and allocation to be consistent with these plans.
- The Water Regulation 2002 which contains a range of regulations under section 1014 of the *Water Act 2000* (Qld) including processes for releasing unallocated water, metering and declared subartesian areas.
- The Queensland WRP, which is subordinate legislation, states the desired general, ecological, economic, Indigenous and social outcomes in each catchment area; the strategies to achieve those outcomes; and objectives for environmental flow and water allocation security.
- The resource operations plan (ROP) which is a statutory instrument that includes the day-to-day rules to implement the strategies stated in the Queensland WRP including water sharing rules and dealings with water entitlements (e.g. trade, subdivision and amalgamation).

Ongoing monitoring of the implementation of the Queensland WRP and ROP is undertaken, and amendments made to the plans as required. Monitoring includes continuous monitoring of water availability, usage and trade, as well as targeted ecological and hydrological assessments. These inform five-yearly plan performance reviews.

At the end of its life, the existing Queensland WRP and ROP are reviewed and may be replaced or amended to improve achievement of plan outcomes. This review follows a planning process as prescribed in the *Water Act 2000* (Qld). A summary of the review process is shown in Figure 4.

Consultation is integral to the review. Regional communities, irrigators, local government, Indigenous groups and conservation interests all have a role to play, and their input is sought in the planning process.

Figure 4: Plan review process



A key principle in Queensland's water planning framework is that the level of management should be fit for purpose considering the risk to the resource.

The planning approach is driven by the outcomes sought for the Queensland WRP. These outcomes have not changed significantly from the previous Water Resource (Warrego, Paroo, Bulloo and Nebine) Plan 2003. The outcomes focus primarily on maintaining the status quo – for instance, protection of the probability of being able to take water under an entitlement, and maintenance of floodplain vegetation. Risk assessments found that there was low risk of the Queensland WRP's outcomes not being met in the future and that ecological assets are also at low risk from water resource management activities. No significant change in demand for water through increasing population or industry use is expected.

A review of implementation of the previous 2003 Queensland WRP, conducted in consultation with the community and stakeholders, found that the 2003 Queensland WRP and ROP have been successful at achieving the desired Queensland WRP outcomes. Therefore key strategies and rules in the previous plans were retained in the new plans with changes generally reflecting new information and more contemporary legislative drafting.

3.2 Water quality

The Environmental Protection (Water) Policy 2009 (EPP Water), subordinate legislation under the *Environmental Protection Act 1994* (Qld) (EP Act), establishes Healthy Waters Management Plans (HWMPs) as a key planning mechanism to improve the quality of Queensland waters. HWMPs seek to achieve the object of the EP Act to protect Queensland's environment whilst allowing for development that is ecologically sustainable. HWMPs address both surface water and groundwater quality and are

developed in consultation with Natural Resource Management (NRM) groups, local governments, industry groups, local Aboriginal Nations and the community. A HWMP prepared under the EPP Water is the primary document referred to under Queensland's approach to the requirements for a Water Quality Management Plan (WQM Plan) in accordance with Chapter 10, Part 7 of the Basin Plan.

The HWMP for the Warrego, Paroo, Bulloo and Nebine Basins (the HWMP) was prepared in consultation with South West NRM Ltd. The development of the HWMP involved engagement with the stakeholder groups listed above, as well as the Northern Basin Aboriginal Nations and New South Wales Government.

The HWMP:

- identifies the key causes of water quality degradation
- assesses the risk to the condition, or continued availability, of Basin water resources as a result of water being of a quality unsuitable for use
- identifies water quality target values for accreditation, and recognises additional water quality target values developed under the Queensland water quality framework
- recognises the land use management responses to address identified risks arising from water quality degradation and contribute to the achievement of objectives
- details the consultation with New South Wales Government on cross-border impacts
- summarises the water quality consultation undertaken with local Aboriginal Nations and lists opportunities to strengthen the protection of Aboriginal values and uses of water.

It is important to note that the management responses in HWMPs address water quality risks predominantly in relation to land use management. Where water quality risks are a result of the operation of storages or the management of water resources, they are addressed through the water allocation and management process described above.

4 Summary of the Warrego–Paroo–Nebine Water Resource Plan

4.1 Preliminary

This chapter provides a summary of how the plan meets the requirements of each part of Chapter 10 of the Basin Plan 2012.

4.2 Part 2—Identification of water resource plan area and other matters

The water resource plan is identified as the Warrego–Paroo–Nebine water resource plan (Water Resource Plan) and it applies to the Paroo, Warrego and Nebine surface water SDL resource units and three groundwater SDL resource units.

The Water Resource Plan is constituted by a number of instruments and texts that are referenced throughout the index located in Chapter 5 of this document. Any sections of the instruments or texts not explicitly identified in the index do not form part of the Water Resource Plan.

The two key referenced instruments are the Queensland statutory plans:

- the Water Resource (Warrego, Paroo, Bulloo and Nebine) Plan 2016
- the Warrego, Paroo, Bulloo and Nebine Resource Operations Plan 2006, Amended February 2016 (Revision 1).

These plans were prepared having regard to the water resources in the Intersecting Streams water resource plan area, located downstream in New South Wales, and in consultation with key stakeholders and regional communities. As a result of this consultation, the plan includes a specific objective that provides protection to flows into New South Wales receiving waters.

4.3 Part 3—Incorporation and application of long-term annual diversion limit

As grazing is the main industry in the Water Resource Plan area, total diversions are relatively low. The main forms of surface water access right by volume of water taken are:

- authorised take by runoff dams for basic rights
- unsupplemented (unregulated) water allocations with flow conditions

Only a small volume of water is taken by overland flow authorities (take by floodplain harvesting).

The Cunnamulla Water Supply Scheme is the sole scheme providing supplemented (regulated) water allocations. The volume of these is very small as the scheme is based on a single 4.8 GL weir. All water allocations, supplemented and unsupplemented, are metered, tradeable and separate to land.

For groundwater, the main form of take is by basic rights, i.e. for stock and domestic purposes. The current take is well below SDL, and not expected to grow.

In the predominantly unregulated river systems of the Water Resource Plan area, water for the environment is mainly planned environmental water i.e. water that remains instream and which is not permitted to be taken for consumptive use. The Commonwealth Environmental Water Holder (CEWH) is the sole holder of 9 GL of held environmental water in the Water Resource Plan area.

Improvement in methods to determine long term annual average take has meant that the methods used in this Water Resource Plan are different to those methods used to produce the estimates of the baseline diversion limit (BDL) in the Basin Plan 2012. In particular, the IQQM models have been

refined and now incorporate additional streamflow data. Specific methodologies have been developed to generate estimates of take by forms of take not previously estimated in the Basin Plan. For forms of water access right such as runoff dams and groundwater for basic rights, the methods to estimate take reflect the low risk of increase in take. As a result, there are new estimates of BDLs for all types of take in the plan area.

Queensland's risk assessment identified that there was a low risk of an increase in take under basic rights, by runoff dams and by plantations. The area's population is projected to remain stable over the next 10 years, and the land is unsuitable for plantations. These factors act as natural limits on these forms of take, and Queensland's approach therefore is to review the situation prior to developing the next Queensland WRP. If there is then found to be an emerging medium to high risk of an increase in these forms of take, Queensland will act to ensure that the SDL can continue to be met.

Where rules are required to ensure that annual permitted take is not exceeded, they are included in the Queensland WRP and ROP. A key strategy is a constraint on the Chief Executive to not make a decision that would increase the amount of water able to be taken.

Queensland has no notified supply, efficiency or constraint measures that would require adjustments to SDLs over time.

4.4 Part 4—The sustainable use and management of water resources

The priority environmental assets and priority ecosystem functions in the Water Resource Plan area are identified in the Long Term Watering Plan (LTWP). They are specifically represented by indicator species or functions with clear links to environmental flows.

The Water Resource Plan was prepared with regard to these assets and functions and incorporates them into the environmental outcomes in the Queensland WRP. As the risk assessment identified low risk to surface water ecological assets from existing water resource management activities in the Water Resource Plan area, the focus is on maintaining the natural flow regime for aquatic species such as native fish. As these rivers naturally experience cycles of 'boom-bust' flow conditions, maintaining refugial waterholes is important to the long-term health of the aquatic species.

In the Water Resource Plan area, water entitlements are mostly unsupplemented (unregulated) and environmental watering requirements are met through limiting access to natural (unregulated) flow events. These limits are applied primarily through access conditions and volumetric limits on water entitlements. In addition, the Queensland WRP contains strategies to meet the outcomes and ensure that the water management rules and strategies do not compromise environmental watering requirements. The relevant strategies are:

- Growth in water use is limited by the water entitlements. Beyond the 100ML of defined unallocated water set aside in each catchment for community purposes, no additional water can be allocated for extraction.
- Any decision made under the Queensland WRP must have no impact on environmental flow indicators (low, medium and high flow).

The ROP contains additional management rules that meet the environmental outcomes and strategies of the Queensland WRP, such as protection of flow events that support fish migration and a pass-flow condition to be applied to a water allocation with a nil-flow condition if it is moved to a new location.

Regarding groundwater, there are three groundwater aquifers within the Water Resource Plan area—the sediments above the Great Artesian Basin (GS60), Warrego Alluvium (GS66) and St George Alluvium (GS63). Baseline diversions are less than 10 per cent of the SDL for each aquifer. None of the plan's outcomes are dependent on groundwater, nor are there any significant connections

between the groundwater and surface water. No specific rules for groundwater were therefore necessary.

The Queensland WRP has made available unallocated water which is a small portion of the SDL identified in the Basin Plan. This preserves the productive base in the sediments above the Great Artesian Basin and the Warrego Alluvium. No unallocated water has been made available in the St George Alluvium, also to maintain the productive base of the aquifer.

There is a low risk of elevated levels of salinity, nutrients or other water quality degradation within the groundwater SDL resource units of the plan area. A medium salinity risk was found for the St George Alluvium (deep). To address this risk, no unallocated water has been made available in the St George Alluvium.

4.5 Part 5—Interception activities

There are some interception activities occurring in the Water Resource Plan area that are managed through the Queensland WRP. These interception activities include floodplain harvesting, stock and domestic runoff dams, change in land use for rehabilitation (erosion control), and groundwater interception by mining and coal seam gas activities.

Other types of interception do not occur, or occur on such a small scale that they have an insignificant impact on Basin Plan water resources. For example, there are no current commercial plantations, nor is the land considered suitable for hardwood or softwood plantation forestry.

No type of interception activity is projected to grow over the life of the Water Resource Plan due to a combination of limits imposed by the Queensland WRP and negligible population growth.

Ongoing monitoring of water resources is required under the ROP, and risk assessments will be conducted each time the Queensland WRP is reviewed. If, whilst the Queensland WRP is in force, the Minister believes that interception activities are having a significant impact on plan outcomes, the Minister must amend or replace the Queensland WRP. These approaches together will ensure that any change from the current low level of interception can be identified and addressed appropriately for this low risk plan area.

4.6 Part 6—Planning for environmental watering

The Basin-wide environmental watering strategy includes four broad environmental outcomes to be achieved beyond 2019. In the Water Resource Plan area, these relate to maintaining river flows and connectivity, vegetation, waterbirds and fish.

Queensland's Long Term Watering Plan (LTWP) identifies priority environmental assets and functions, for example floodplain vegetation and wetland systems, that encompass the outcomes of the Basin-wide environmental watering strategy. Queensland's priority environmental assets and functions are embodied in the ecological outcomes stated in the Queensland WRP. The LTWP describes how the Queensland WRP provides for environmental watering to occur to achieve the ecological outcomes. In particular, the Queensland WRP prevents growth in water take, and specifies environmental flow objectives for priority environmental assets and functions.

Consultation was undertaken with key stakeholders and local communities over the course of the Queensland WRP and ROP review and development. This informed the development of the LTWP.

The Water Resource Plan area has a surface water connection with the surface water in the Intersecting Streams plan area in New South Wales. Queensland consulted with the New South Wales government to ensure co-ordination of environmental watering. In particular, the Queensland WRP includes a mean annual flow objective to ensure sufficient water passes into the New South Wales section of the system.

There has been no net reduction in the protection of planned environmental water than that provided for under State water management law immediately before the commencement of the Basin Plan. For example, since 2012 there has been no change to entitlements in the plan area and the key strategy of no further take remains in place. The ecological outcomes and environmental flow objectives in the Queensland WRP were reviewed and updated based on improved information on the water-dependent ecology and hydrology in the plan area.

4.7 Part 7—Water quality objectives

The Water Quality Management Plan (WQM Plan) for the Warrego-Paroo-Nebine Water Resource Plan draws principally on the Healthy Waters Management Plan — Warrego, Paroo, Bulloo and Nebine Basins (HWMP) prepared under the Queensland Environmental Protection (Water) Policy 2009 (EPP Water). The EPP Water is subordinate legislation under the *Environmental Protection Act 1994* (Qld). HWMPs address both surface water and groundwater quality and are developed in consultation with Natural Resource Management (NRM) groups, government agencies, industry groups, local Aboriginal Nations and the community.

The HWMP is broader in scope than the WQM Plan in terms of the range of assessed risks to water quality degradation, as well as the type and number of water quality target values provided. It also identifies a broad suite of existing and potential management responses to the identified risks, many of which are not water-related and are outside the scope of the *Water Act 2007* (Cth) and *Water Act 2000* (Qld). Where relevant, these additional risks, target values and management responses are recognised in the WQM Plan to ensure that water quality management in the Queensland Murray–Darling Basin catchments under the Basin Plan 2012 can be understood in the context of the wider State water quality framework.

The key types of water quality degradation identified within the plan area for the purposes of the Water Quality Management Plan are:

- Elevated levels of suspended matter and deposited sediment—a very high risk for Paroo surface waters and high risk for Warrego and Nebine surface waters.
- Dissolved oxygen outside natural (ambient) ranges—a medium risk for Paroo surface waters.
- Elevated levels of salinity—a medium risk for groundwater in the deep part of the St George Alluvium (GS63). Note that the St George Alluvium is managed as two separate resource units in Queensland (shallow and deep) to reflect that they are disconnected units requiring different management arrangements.

Three measures were included in the WQM Plan to address risks arising from water quality degradation (for medium, high and/or very high risks) and contribute to the achievement of objectives:

- Establishment of Environmental Values (EVs) and Water Quality Objectives (WQOs) for the waters of the Warrego, Paroo and Nebine plan area under Schedule 1 of the Queensland Environmental Protection (Water) Policy 2009, to inform statutory and non-statutory planning and decision-making.
- Limiting any increase in the take of groundwater from the lower part of the St George Alluvium management unit through the following provisions in the Queensland WRP to address a medium risk of salinity:
    - Section 19: Decision to not increase amount of water taken
    - Section 29 (2): Limitation on taking or interfering with groundwater—Act, s 20(2)(c).
- Implementation of Basin Salinity Management 2030 in Queensland, in accordance with Schedule B of Schedule 1 of the Commonwealth Water Act 2007 (and as revised) – for the purposes of long-term salinity planning and management.

The cause of the remaining medium, high and very high risks identified in the WQM Plan was outside the scope of management by the *Water Act 2007* (Cth) and *Water Act 2000* (Qld). The WQM Plan recognises the land management responses under the HWMP to address these risks however they are not formally listed for accreditation under the Basin Plan 2012. Management responses in the HWMP include control of total grazing pressure and pest species through the Queensland Natural Resource Management Program and National Landcare Program, as well as recording instances of black water events to monitor frequency of occurrence in relation to land management.

The water quality target values listed in the WQM Plan include a number of alternative, more locally relevant values than the default values included in the Basin Plan for this plan area.

4.8 Part 8—Trade of water access rights

Part 8 of Chapter 10 of the Basin Plan relates specifically to the trade within groundwater SDL resource units, between groundwater SDL resource units and between groundwater and surface water SDL resource units.

Currently there is no trading of groundwater water access rights permitted under State law in the Water Resource Plan area. Water is available from the unallocated water reserve for the Warrego Alluvium and Sediments under the Great Artesian Basin, and there has been no demand for trading. From the unallocated groundwater reserve, water will be issued as a water licence (a water access right attached to land) under Queensland water law.

4.9 Part 9—Approaches to addressing risks to water resources

Risk assessments were conducted as part of the development of this Water Resource Plan, to consider risks to the environment, water quality and security of water supply. All risk assessments were conducted consistently with the risk management standard AS/NZS ISO 31000: 2009. Moderate to high risks were identified and management measures developed and incorporated in the Queensland WRP.

The environmental risk assessment was carried out during the review process of the Queensland WRP, and focused on the risk to the ecological outcomes in the Queensland WRP 2003 as a result of water resource development. This assessment also addresses the Basin Plan requirement to have regard to the risk of poor health of water-dependent ecosystems. The assessment was conducted using a combination of hydrological and ecological modelling to understand how changes in water availability and flow timing (as determined by the Queensland WRP and ROP rules) impact on specific ecological assets. There was found to be a low risk of impact on ecological assets as a result of the proposed rules managing water resource use. Consequently no new rules were required in the Queensland WRP to further protect ecological assets.

The water supply security risk assessment identified a high risk of growth in take of groundwater from the St George Alluvium (deep). This is due to high demand for groundwater from this aquifer in areas outside the plan area. To address this, no further take will be permitted from the aquifer. As all surface water risk factors were rated as low risk, no strategies were required to be developed.

Risks to water quality were assessed in the HWMP, which is the primary document referred to by the Water Quality Management Plan. The key risks to water quality were:

- elevated levels of suspended matter and deposited sediment (very high risk for Paroo surface waters and high risk for the Warrego and Nebine surface waters)
- dissolved oxygen outside natural (ambient) ranges (medium risk for the Paroo surface waters)
- elevated levels of salinity (medium risk for the St George Alluvium (deep) groundwater aquifer).

To address the risk of elevated salinity in the St George Alluvium (deep), no further take is permitted from this management unit under the Queensland WRP. As the other key water quality risks are due to land management, these risks are addressed through the management responses in the HWMP.

4.10 Part 10—Measuring and monitoring

While there are a number of classes of water access rights in the Water Resource Plan area, many of them only take very low quantities of water. They are at low risk of growth due to negligible projected population growth and strategies within the Queensland WRP that prevent increases in water take. Consequently a fit-for-purpose approach to measuring the quantity of water taken has been applied.

All tradeable water allocations with works are metered. The Warrego catchment is the more developed catchment and over half of the water taken in this catchment is metered. The quantity of water taken from surface water in the Paroo and Nebine and from the groundwater in the Water Resource Plan area is very low. The majority of this take is from runoff dams and therefore cannot be measured in a cost-effective manner. In total, around a third of all take in the Water Resource Plan area is currently measured. Given the low risk of growth, the current approach to measuring take is appropriate and fit-for-purpose.

4.11 Part 11—Reviews of water resource plans

The Queensland WRP and ROP are the main components of the Water Resource Plan. Queensland law requires a statutory process, including statutory reports and public consultation, to review and amend these plans. The statutory reports of any review or proposed amendment will be provided to the Murray-Darling Basin Authority (MDBA). These set out the reasons for undertaking the proposed amendment.

4.12 Part 12—Information used to prepare the Water Resource Plan

Queensland has used multiple sources of information to prepare the Water Resource Plan. In some cases, Queensland has undertaken or commissioned primary research, where no other information was previously available.

Queensland has a highly regarded environmental science program which includes research into water-dependent ecological assets, establishing critical flow requirements, and assessing the risk to those assets. All environmental assessments have been peer-reviewed.

The hydrologic models for the Warrego, Paroo and Nebine catchments are significant methods used to inform the preparation of the Water Resource Plan. The models are based on the Integrated Quantity and Quality Model (IQQM) modelling platform using the best available hydro-meteorological and water management data. The models simulate the long-term take from watercourses under supplemented (regulated), unsupplemented (unregulated) water allocations and water licences. New methods were developed to estimate stock and domestic take and take from runoff dams. These were based on reports prepared by consultants.

Additionally, Queensland has undertaken multiple risk assessments, socio-economic and cultural assessments, and significant public consultation to inform the preparation of the Water Resource Plan. In consulting with Aboriginal people, Queensland was guided by key Aboriginal groups, particularly the Northern Basin Aboriginal Nations (NBAN), as well as best practice guidelines and principles on Aboriginal engagement.

4.13 Part 13—Extreme events

Dry periods of no flow are a regular occurrence in this arid Water Resource Plan area, and all town water supplies are sourced from the Great Artesian Basin. Whilst there are provisions in the *Water Act 2000* (Qld) to suspend statutory water plans in an extreme event, there has been no extreme dry

period which has ever resulted in the suspension of a statutory water plan in the plan area. The ROP contains robust operating and water sharing rules that provide for transparent access arrangements under a wide range of water availability.

In the case of a water quality event sufficient to render water acutely toxic or unusable, the extreme event provisions in the *Water Act 2000* (Qld) may be triggered. These allow the Minister to suspend the water sharing rules in the ROP.

4.14 Part 14—Indigenous values and uses

The Water Resource Plan identifies the objectives of Indigenous people in relation to managing water resources and the outcomes desired by Indigenous people for the management of water resources. The objectives and outcomes are based on Indigenous values and uses that were identified through consultation with Indigenous people in the plan area. Consultation was undertaken in collaboration with the NBAN, South West NRM, Far South West Aboriginal NRM Group, Queensland South Native Title Services and Traditional Owners.

The Queensland WRP includes Indigenous outcomes to highlight the important role of water planning in protecting Aboriginal values and uses of water. Management arrangements in the Queensland WRP protect waterholes, lakes and springs that were identified as important to Indigenous people across the catchments. Limiting the take of water from these water sources helps to maintain the ecological health and integrity of these systems and in turn assists in the protection of cultural values that link to this water.

Opportunities to strengthen the protection of Indigenous values and uses are linked to the risks to values and uses identified in consultation with Traditional Owners. The opportunities address the identified risks and include flow-related aspects of water management that can be managed under the Queensland WRP as well as water quality and land management aspects that are addressed in the Healthy Waters Management Plan.

The Queensland government took a planned approach to consultation with Traditional Owners with engagement opportunities provided throughout all phases of the review of the Queensland WRP and development of the Water Resource Plan and HWMP. This included pre-draft Queensland WRP consultation, formal submissions on the draft Queensland WRP and a series of meetings during the finalisation of the Queensland WRP. The Queensland government was also guided in its consultation by principles outlined in a number of documents, including the Akwe: Kon Guidelines.

The government sought the advice of NBAN, South West NRM and other Indigenous organisations on the appropriate Traditional Owners in the plan area to consult with and on strategies to notify and engage with the participants. Through the course of the development of the Water Resource Plan, the Queensland government worked with NBAN to improve the way Aboriginal people were informed of consultation opportunities and how information was provided during the consultation meetings.

Discussions with NBAN during the development of the Water Resource Plan included reference to the importance of cultural flows to Aboriginal people in the Murray-Darling Basin. Queensland recognises this importance and is committed to working further with NBAN and other stakeholder groups to understand cultural flows and how these flows may relate to the state water planning framework.

The Water Resource Plan retains the level of protection of Aboriginal values and uses through a fit-for-purpose approach via strategies, environmental flow objectives and rules in the Queensland WRP and ROP that protect flows. Protection of the near natural flows in the catchments contributes to the protection of many of the Aboriginal values and uses that were identified in consultation. In addition, protection of Aboriginal values and uses has been provided through legislative provisions in the *Water Act 2000* (Qld) that provide water for cultural purposes and traditional activities, and reserves of

unallocated water that are available to Aboriginal people in the plan area for social and economic purposes.

5 Index

5.1 Introduction to the index

The index sets out each individual requirement listed in Chapter 10 of the Basin Plan 2012, the Queensland instruments and texts (or sections thereof) to be accredited as addressing that requirement, and any explanatory notes required to provide further information on how the instrument or text addresses that requirement. In many cases, a specific requirement may be met by a number of different instruments or texts together addressing that requirement. The provisions identified in this Water Resource Plan should be interpreted consistently with the statutory context within which those provisions sit. This Water Resource Plan is subject to the water trading rules in Chapter 12 of the Basin Plan.

5.2 Part 2—Identification of water resource plan area and other matters

Note: Any sections of the instruments or texts not explicitly identified in this table do not form part of this Water Resource Plan.

BP Section (s10.04(4)(a))	BP requirement (s10.04(4)(a))	Instrument or text addressing BP requirements (s10.04(2))	Part of instrument or text constituting Water Resource Plan that addresses the requirement (s10.04(4)(b))	Explanatory Notes
Part 2—Identification of water resource plan area and other matters				
10.02 Identification of water resource plan area and water resources	1) A water resource plan must identify: the water resource plan area and the water resources to which it applies. 2) The water resource plan area must be one of the water resource plan areas described in Part 2 Chapter 3 and must be identified using the same	This index[2]	Explanatory note 2A of Part 2 of Chapter 5 Index	**Explanatory note 2A** The water resource plan area and the water resources to which it applies are set out in s.3.07 of the Basin Plan 2012. Section 3.07 states that *'Each of the following named areas is a water resource plan area that applies to the surface water resources and groundwater resources indicated:* *(a) Warrego-Paroo-Nebine – the following:* *(i) all surface water resources in the area;*

[2] Department of Natural Resources and Mines (DNRM) (2016j) Warrego-Paroo-Nebine Water Resource Plan, November 2016

BP Section (s10.04(4)(a))	BP requirement (s10.04(4)(a))	Instrument or text addressing BP requirements (s10.04(2))	Part of instrument or text constituting Water Resource Plan that addresses the requirement (s10.04(4)(b))	Explanatory Notes
	description of that area as is set out in that part, with any variations permitted by section 3.04. 3) The water resources must be those described in Part 2 of Chapter 3 as the water resources of the water resource plan area and must be identified using the same description of those water resources as is set out in that part.			*(ii) all groundwater resources beneath the area that are above the Great Artesian Basin…'*
		Not for accreditation	*Not for accreditation*	The Queensland WRP[3] defines the state plan area, the catchment areas, the groundwater management areas and groundwater units for the plan area. A map of the plan and catchment areas are shown in schedule 1 of the Queensland WRP. The Water Resource Plan area is defined by the areas shown for the Warrego, Paroo and Nebine catchments. Note that the Queensland WRP also includes the Bulloo catchment, which is not part of the Murray-Darling Basin. A map of the groundwater management areas which have been further subdivided into groundwater units are shown in schedule 2 of the Queensland WRP. The Queensland WRP recognises that the St George Alluvium (deep) and St George Alluvium (shallow) are not connected resources, and have different associated risks. These two aquifers are managed as two separate groundwater units within the groundwater management area. Further information about the exact location and boundaries of the plan area and catchment areas are held in digital electronic form by the department and can be inspected at departmental offices. Section 9 of the Queensland WRP describes the water resources that the plan manages which include; surface water and groundwater not connected to artesian water.

[3] Water Resource (Warrego, Paroo, Bulloo and Nebine) Plan 2016 (Qld).

BP Section (s10.04(4)(a))	BP requirement (s10.04(4)(a))	Instrument or text addressing BP requirements (s10.04(2))	Part of instrument or text constituting Water Resource Plan that addresses the requirement (s10.04(4)(b))	Explanatory Notes
10.03 Identification of SDL resource units and water resources	1) A water resource plan must identify: each SDL resource unit in the water resource plan area, and the water resources within each SDL resource unit. 2) The SDL resource units must be those described in sections 6.02 and 6.03 and Schedule 2 and 4 as the SDL resource units within the water resource plan area, as applicable. 3) The water resources within each SDL resource unit must be those described in section 6.02 and 6.03, and Schedules 2 and 4.	This index	Explanatory note 2B of Part 2 of Chapter 5 Index	**Explanatory note 2B** The surface water SDL resource units in the Water Resource Plan area are those identified in Schedule 2 of the Basin Plan 2012, being the Paroo (SS29), Warrego (SS28) and Nebine (SS27). As per s.6.02 of the Basin Plan 2012, the water resources within these SDL resource units are all surface water resources within the area of each SDL resource unit. The groundwater SDL resource units in the Water Resource Plan area are those identified in Schedule 4 of the Basin Plan 2012, being the Sediments above the Great Artesian Basin: Warrego-Paroo-Nebine (GS60), St George Alluvium: Warrego-Paroo-Nebine (GS63) and the Warrego Alluvium (GS66). As per s.6.03 of the Basin Plan 2012, the water resources within these SDL resource units are all groundwater resources described by column 2 of the table in Schedule 4 that lie beneath the area of the SDL resource unit. It should be noted that the SDL resource unit St George Alluvium: Warrego-Paroo-Nebine (GS63) is made up of two aquifer units disconnected from each other – the St George Alluvium (deep) and the St George Alluvium (shallow). Queensland manages these units as separate resources with different levels of permitted take. The BDL of the combined unit, the St George Alluvium: Warrego-Paroo-Nebine (GS63), is below the SDL as specified in the Basin Plan 2012. This should not be taken to infer that either of the St George Alluvium (deep or shallow) aquifers individually is below a sustainable level of take.
10.04	1) If a water resource plan is constituted by 2 or more	This Index	Chapter 5 Index	The Water Resource Plan is made up of more than two instruments or texts and these are identified In the third column entitled ‘Instrument or

BP Section (s10.04(4)(a))	BP requirement (s10.04(4)(a))	Instrument or text addressing BP requirements (s10.04(2))	Part of instrument or text constituting Water Resource Plan that addresses the requirement (s10.04(4)(b))	Explanatory Notes
Form of a water resource plan	instruments or texts, subsection (2) and (3) apply to it. 2) The water resource plan must identify the instruments or texts that constitute the water resource plan.			text addressing the BP requirements' of the tables set out in Chapter 5 Index, Also note that further details about each of the instruments and texts are set out in Appendix A in this Index document.
	3) If an instrument or text applies only to some of the water resources of the water resource plan area, the water resource plan must: identify the water resources or the parts of the water resources to which the instrument or text applies, and include an indicative map of the water resources identified.	This Index	Chapter 2 Figure 1: Map of Warrego-Paroo-Nebine surface water SDL resource units Chapter 2 Figure 2: Map of Warrego-Paroo-Nebine groundwater SDL resource units Appendix A Instruments and texts that constitute the Water Resource Plan,	The last column in Appendix A identifies the water resources to which the relevant instrument applies. These are defined in terms of their SDL resource units. Indicative maps of surface water and groundwater SDL resource units identified in Appendix A are set out in Figures 1 and 2 of Chapter 2 of this Index.
	4) A water resource plan must include a list that specifies: (a) each requirement set out in this Chapter; and (b) the part of the plan that addresses each requirement, and (c) the parts of the plan that will cease to have effect or are to be reviewed, and the times at which	This Index	Chapter 5 Index Appendix A Instruments and texts that constitute the Water Resource Plan	The first two columns in the tables set out in Chapter 5 Index list each of the Water Resource Plan requirements as set out in Chapter 10 of the Basin Plan. The fourth column in the tables set out in Chapter 5 Index list the part of the Water Resource Plan that addresses each requirement. In the Appendix A table, the column entitled 'End date of instrument or proposed review date' sets out when the relevant instrument or text will cease to have effect or when it is due to be reviewed.

BP Section (s10.04(4)(a))	BP requirement (s10.04(4)(a))	Instrument or text addressing BP requirements (s10.04(2))	Part of instrument or text constituting Water Resource Plan that addresses the requirement (s10.04(4)(b))	Explanatory Notes
	those parts will cease to have effect or are to be reviewed.			
	5) If a water resource plan is constituted by an instrument or text which contains additional material that is not part of the water resource plan, the water resource plan must identify that material.	This index	Chapter 5 Index	The Chapter 5 index sets out that any sections of the instruments or texts not explicitly identified in its tables do not form part of this Water Resource Plan
10.05 Regard to other water resources	A water resource plan must: (a) be prepared having regard to the management and use of any water resources which have a significant hydrological connection to the water resources of the water resource plan area, and (b) describe the way in which paragraph (a) was complied with.	Environmental Assessment Report–Stage 2[4]	Chapter 2: Hydrology and water resource development of the plan area	This text provides an introduction to the hydrology (including intersystem flows) of the water resource plan area. The only surface water resources with a significant hydrological connection to the water resources of the plan area are the watercourses such as the Darling and Culgoa Rivers within the Intersecting Streams plan area at the state border of Queensland and New South Wales.
		Queensland WRP	Section 10(2)(c) Outcomes for water in plan area Section 19: Decision to not increase amount of water taken	The Queensland WRP was prepared having regard to the management and use of surface water and groundwater resources which have a significant hydrological connection to the water resources of the plan area. Based on the environmental assessments undertaken for the Queensland WRP, the Queensland WRP sets a value for mean annual flows that cross the border from Queensland into New South Wales (refer Schedule 4 of the Queensland WRP).

[4] Department of Science, Information, Technology, Innovation and the Arts (DSITIA) (2013a), *Review of Water Resource (Warrego, Paroo, Bulloo and Nebine) Plan 2003 and Resource Operations Plan: Environmental Assessment Report–Stage 2*, State of Queensland, October 2013.

BP Section (s10.04(4)(a))	BP requirement (s10.04(4)(a))	Instrument or text addressing BP requirements (s10.04(2))	Part of instrument or text constituting Water Resource Plan that addresses the requirement (s10.04(4)(b))	Explanatory Notes
			Schedule 4: Environmental flow objectives and performance indicators	Section 10(2)(c) of the Queensland WRP ensures the allocation and management of water under the water resource plan is consistent with water sharing agreements and commitments between Queensland and New South Wales such as the Paroo River Agreement. Section 19 of the Queensland WRP prevents the chief executive from making a decision about water in the plan area that would increase the average volume of water taken or the total nominal entitlement for taking groundwater under the plan. Effectively this provision protects existing entitlements and water for the environment from incremental increases in the amount of water taken from the plan area.
		This Index	Explanatory Note 2C of Part 2 of Chapter 5 Index	**Explanatory Note 2C** The responsible person for undertaking the measure in Section 19 of the Queensland WRP is the chief executive in accordance with Section 10.06 (2) of the Basin Plan.
		Groundwater background papers[5]	Sediments above the Great Artesian Basin groundwater background paper - Chapter 3: Groundwater condition.	A review of the evidence relating to the three groundwater SDL units in the Water Resource Plan area found that there are no known significant hydrological connections between groundwater and surface water. There are no known significant hydrological connections between the groundwater SDL resource units and the Great Artesian Basin (GAB).

[5]DNRM (2016a), *Sediments above the Great Artesian Basin: Groundwater background paper*, State of Queensland, February 2016; DNRM (2016b), *St George Alluvium: Groundwater background paper*, State of Queensland, February 2016; DNRM (2016c), *Warrego Alluvium: Groundwater background paper*, State of Queensland, February 2016.

BP Section (s10.04(4)(a))	BP requirement (s10.04(4)(a))	Instrument or text addressing BP requirements (s10.04(2))	Part of instrument or text constituting Water Resource Plan that addresses the requirement (s10.04(4)(b))	Explanatory Notes
			St George Alluvium groundwater background paper - Chapter 2: Shallow alluvium Warrego Alluvium groundwater background paper – Chapter 3: Groundwater condition	Where a single groundwater resource is identified as more than one groundwater SDL resource unit, the management arrangements applied under Queensland's state WRPs will have the effect of managing the resource as a single resource. This is the case for the St George Alluvium and the Sediments above the GAB. The proposed management arrangements for the neighbouring Condamine-Balonne, Moonie and Border Rivers Water Resource Plan areas will be consistent with the management of hydrologically connected groundwater in the plan area.
		This index	Explanatory note 2D of Part 2 of Chapter 5 Index	**Explanatory note 2D** Proportionally small areas of the Warrego Alluvium, the St George Alluvium and the Sediments above the Great Artesian Basin (GAB) SDL resource units extend into NSW and connect with NSW GAB Warrego Shallow (GS35) and NSW GAB Central Shallow (GS36). There is unallocated water available in two of these groundwater units, the Sediments above the GAB and the Warrego Alluvium. However, much of this water has high salinity levels and variable reliability and is thus of limited use. Even in light of the low risk associated with the Sediments above the GAB and the Warrego Alluvium (refer Part 9 of this index), the State has taken a conservative management approach by releasing smaller volumes (than identified as available under the Basin Plan) of unallocated water through the Queensland WRP. This represents a stepped approach to developing the resource by allowing the release of ample water to meet demand, while recognising some uncertainty about the relatively low extraction densities these shallow alluvial aquifers are capable of supporting. St George Alluvium is the only SDL resource unit considered to have a high risk associated with

BP Section (s10.04(4)(a))	BP requirement (s10.04(4)(a))	Instrument or text addressing BP requirements (s10.04(2))	Part of instrument or text constituting Water Resource Plan that addresses the requirement (s10.04(4)(b))	Explanatory Notes
				growth in take of groundwater for irrigation and other non-mining purposes. However, there is no unallocated water available in the resource unit and the combination of sections 19 and 29 of the Queensland WRP prohibits any growth in take for this resource unit. Consultation has occurred throughout the development of this Water Resource Plan with New South Wales government agencies and cross-border groups such as the Border Rivers Standing Committee and Intersecting Streams Working Group, regarding hydrologically connected surface water and groundwater resources that cross the border into NSW. The primary feedback provided by New South Wales related to the performance indicators for surface water (refer to schedule 4 of the Queensland WRP). This consultation resulted in the addition of a low flow indicator for the environmental flow objectives for the plan. The 'days in low flow periods' is the percentage of the total number of days where there has been a low flow period in the simulation period. A low flow period is when there has been a continuous period of at least one year where the flow has been no more than 86 megalitres per day. No further concerns regarding the management of hydrologically connected surface water or groundwater resources were raised by Queensland or NSW during consultation.
		This index	Part 7 Water quality objectives of Chapter 5 Index	The Queensland Government consulted with water quality representatives from the New South Wales Government on the impact of the Water Quality Management Plan on the management and use of

BP Section (s10.04(4)(a))	BP requirement (s10.04(4)(a))	Instrument or text addressing BP requirements (s10.04(2))	Part of instrument or text constituting Water Resource Plan that addresses the requirement (s10.04(4)(b))	Explanatory Notes
				surface water and groundwater resources that have significant hydrological connection to the Warrego, Paroo and Nebine catchments. Part 7 of this index describes the way in which the feedback from the New South Wales Government was addressed by the WQM Plan.
		Intergovernment Agreement for the Paroo River between New South Wales and Queensland[6]	Document in its entirety	The Queensland WRP contains provisions that ensure the allocation and management of water under the water resource plan is consistent with water sharing agreements and commitments between Queensland and New South Wales such as the Paroo River Agreement.
10.06 Matters relating to requirements of Chapter	1) For each matter that this Chapter requires to be dealt with in a water resource plan, the plan must specify the person responsible for the matter. 2) Without limiting subsection (1), if a water resource plan requires a measure or action to be undertaken, the plan must specify the person responsible for undertaking that measure or action.	This index	Appendix A in its entirety	Appendix A identifies the person responsible for administering each instrument or text. Unless otherwise identified in the Chapter 5 Index, this person is also responsible for undertaking a measure or action under the instrument or text identified.
		This index	Explanatory note 2E of Part 2 of Chapter 5 Index	**Explanatory note 2E** To avoid doubt, and consistently with section 1.09 of the Basin Plan 2012, if: (a) the Water Resource Plan purports to impose an obligation on a Basin State to do a particular thing; (b) the imposition of that obligation would contravene a constitutional doctrine restricting the obligations that the Commonwealth may impose on a State and;

[6] Intergovernment Agreement for the Paroo River between New South Wales and Queensland, July 2003.

BP Section (s10.04(4)(a))	BP requirement (s10.04(4)(a))	Instrument or text addressing BP requirements (s10.04(2))	Part of instrument or text constituting Water Resource Plan that addresses the requirement (s10.04(4)(b))	Explanatory Notes
				(c) the Water Resource Plan is taken, instead of imposing the obligation, to confer a discretion on the Basin State to do the thing.
10.07 Consultation to be demonstrated	1) A water resource plan prepared by a Basin State must contain a description of the consultation in relation to the plan (including in relation to any part of the plan), if any, that was undertaken before the State gave the plan to the Authority under subsection 63(1) of the Act. 2) If a water resource plan is amended in accordance with section 65 of the Act, the plan must contain a description of the consultation in relation to the amendment, if any, that was undertaken before the relevant Basin State gave the proposed amendment to the Authority	Consultation report[7]	Consultation report in its entirety	The consultation report is prepared under the *Water Act (2000)* (Qld) to describe the consultation undertaken as part of the development of the new Queensland WRP and amended Resource Operations Plan (ROP), the issues raised in consultation and how those issues have been addressed. Key issues raised included the release of water from Allan Tannock Weir for stock and domestic use, changes to the water year for Cunnamulla Water Supply Scheme, Aboriginal values and uses, and the protection of held environmental water and environmental flows.
		Cultural assessment[8]	Chapter 2: Getting Aboriginal voices into water planning Chapter 3: The importance of water to Aboriginal people in the Warrego, Paroo, Bulloo and Nebine catchments	Chapters 2 and 3describe the importance and processes used to consult with Aboriginal people in the preparation of the water resource plan. In particular, the Queensland government worked with Northern Basin Aboriginal Nations to most effectively engage with local Aboriginal people.

[7] DNRM (2016d), *Warrego, Paroo, Bulloo and Nebine water resource plan and amended resource operations plan: Consultation report*, State of Queensland, February 2016.
[8] DNRM (2014b), *Warrego, Paroo, Bulloo and Nebine water resource plan and amended resource operations plan: Cultural assessment*, State of Queensland, April 2014.

BP Section (s10.04(4)(a))	BP requirement (s10.04(4)(a))	Instrument or text addressing BP requirements (s10.04(2))	Part of instrument or text constituting Water Resource Plan that addresses the requirement (s10.04(4)(b))	Explanatory Notes
	under subsection 65(2) of the Act.	Aboriginal values and uses report[9]	Chapter 4: Objectives and outcomes based on Aboriginal values and uses	Chapter 4of the report summarises the approach taken by the Queensland Government in consulting with Aboriginal people in the Water Resource Plan area. It deals with how the Queensland Government involved Traditional Owners in identifying the objectives, outcomes, values and uses of water throughout the planning process. Chapter 4 also refers to the documents and guidelines that the Queensland Government was guided by in its consultation, including Akwé: Kon Guidelines and the principles of Indigenous engagement in the Murray-Darling Basin prepared by Murray Lower Darling Rivers Indigenous Nations and Northern Basin Aboriginal Nations.
		Healthy Waters Management Plan[10]	Section 4: Consultation	Section 4 describes the consultation process in the development of the Water Quality Management Plan.
		Implementation Review Report[11]	Chapter 5: Consultation Chapter 6: Proposed key directions for the new draft water resource plan and resource operations plan	Chapter 5 of the Implementation Review Report describes the consultation undertaken to identify any stakeholder concerns relating to the existing 2003 Queensland WRP and ROP, and the issues raised. Chapter 6 identifies key issues to be addressed in the new Queensland

[9] DNRM (2016e), *Warrego, Paroo, Bulloo and Nebine water resource plan and resource operations plan: Aboriginal values and uses*, State of Queensland, January 2016.
[10] Department of Environment and Heritage Protection (DEHP) (2016a), *Healthy Waters Management Plan: Warrego, Paroo, Bulloo and Nebine basins*, State of Queensland, February 2016.
[11] DNRM (2013), *Implementation Review Report: Warrego, Paroo, Bulloo and Nebine Water Resource Plan and Resource Operations Plan*, State of Queensland, November 2013.

BP Section (s10.04(4)(a))	BP requirement (s10.04(4)(a))	Instrument or text addressing BP requirements (s10.04(2))	Part of instrument or text constituting Water Resource Plan that addresses the requirement (s10.04(4)(b))	Explanatory Notes
				WRP and amended ROP, a number of which were identified through the consultation.
		This index	Explanatory note 2F of Part 2 of Chapter 5 Index	**Explanatory note 2F:** The development of the Water Resource Plan has involved significant consultation with the Murray-Darling Basin Authority (MDBA) to ensure that Basin Plan requirements are being addressed. Bilateral meetings and teleconferences occurred throughout 2013, 2014 and 2015. Early discussions focused on the supporting assessments such as risk assessments and environmental assessments, with later discussions focused on developing Queensland's Water Resource Plan accreditation package. Queensland provided draft versions of the Water Resource Plan to the MDBA for comment prior to formally providing it for accreditation, and made multiple revisions to incorporate advice from the MDBA.

5.3 Part 3—Incorporation and application of long-term annual diversion limit

Note: Any sections of the instruments or texts not explicitly identified in this table do not form part of this Water Resource Plan.

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text constituting Water Resource Plan that addresses the requirement	Explanatory Notes
Part 3—Incorporation and application of long-term annual diversion limit				
Division 1—Water access rights				
10.08 Water access rights must be identified	(1) A water resource plan must identify the following: (a) each form of take from each SDL resource unit in the water resource plan area; (b) any classes of water access right that apply to the forms of take identified under paragraph (a); (c) the characteristics of each class of right including, where appropriate, the number of rights and any conditions on the exercise of the rights. (2) A water resource plan must require a holder of a water access right to comply with the conditions of that right.	Water Accounting Methods Report[12]	Chapter 2: Queensland's water access rights Chapter 3: Water access rights in the plan area	Chapter 2 provides the explanation of the forms of take and the classes for water access rights. Chapter 3 of this text sets out information on each form of take from surface water and groundwater, including the classes of water access right and characteristics of each class of right. Note that: • There is only a small volume of supplemented (regulated) water allocation in the plan area and it is located in the Cunnamulla Water Supply Scheme in the Warrego catchment. • The main forms of takes are runoff dams for basic rights, unsupplemented (unregulated) water allocations with flow conditions. Note that only a small volume of water is taken by overland flow authorities (take by floodplain harvesting). Further information about the long-term average permitted take is given by the estimated BDLs in chapter 5.8.4 Demonstration of the method for each SDL resource unit.

[12] DNRM (2016f), *Water Accounting Methods Report for Warrego-Paroo-Nebine Water Resource Plan*, State of Queensland, November 2016

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text constituting Water Resource Plan that addresses the requirement	Explanatory Notes
		Water Act 2000 (Qld)[13]	Section 808: Unauthorised taking, supplying or interfering with water, Section 812: Contravening conditions of water entitlement, seasonal water assignment notice or water permit	Section 808 of the *Water Act 2000* (Qld) makes it an offence to take or supply water unless authorised to do so under the Act. Section 812 of the *Water Act 2000* (Qld) creates an offence for a person to contravene the conditions of a water allocation, interim water allocation, water licence or water permit.
10.09 Identification of planned environmental water and register of held environmental water	(1) A water resource plan must identify the planned environmental water in the water resource plan area and associated rules and arrangements relating to that water. (2) A water resource plan must provide for the establishment and maintenance of a register, to be published on a website specified by the plan, of held environmental water for the water resource plan area which records: (a) the characteristics of held	*Water Act 2000* (Qld)	Section 808: Unauthorised taking, supplying or interfering with water, Section 812: Contravening conditions of water entitlement, seasonal water assignment notice or water permit	Planned environmental water in the Warrego-Paroo-Nebine Water Resource Plan area is the remaining share of the water resource that is not in the consumptive water share (i.e. permitted to be taken under the *Water Act 2000* (Qld) and Queensland WRP). To be clear, planned environmental water does not include held environmental water. Planned environmental water is protected by section 808 of the *Water Act 2000* (Qld), which makes it an offence to take or supply water unless authorised to do so under the Act. Section 812 of the *Water Act 2000* (Qld) creates an offence for a person to contravene the conditions (including the volumetric limits) of their entitlement.

[13] *Water* Act *2000* (Qld), current as at 2 October 2015

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text constituting Water Resource Plan that addresses the requirement	Explanatory Notes
	environmental water in the water resource plan area (for example, quantity, reliability, security class, licence type, limitations); and (b) who holds that water. (3) Subsection (2) is satisfied if the plan identifies a register of held environmental water which records the matters required by subsection (2) and is published on a website.	Queensland WRP[14]	Section 19 Decision not to increase amount of water taken Section 20 Decisions to be consistent with objectives	Section 19 of the Queensland WRP ensures that the long-term annual average permitted take under water allocations does not increase by limiting management decisions (such as the granting of water entitlements) to those that do not increase the amount of water able to be taken. Section 20 requires decisions to be consistent with environmental flow objectives. These sections contribute to protecting the amount of water left instream.
		This Index[15]	Explanatory Note 3A of Part 3 of Chapter 5 Index	**Explanatory Note 3A** The responsible person for undertaking the measure in Section 19 and in Section 20 of the Queensland WRP is the chief executive (in accordance with Section 10.06 (2) of the Basin Plan).

[14] Water Resource (Warrego, Paroo, Bulloo and Nebine) Plan 2016 (Qld)
[15] DNRM (2016j) Warrego-Paroo-Nebine Water Resource Plan, November 2016

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text constituting Water Resource Plan that addresses the requirement	Explanatory Notes
		ROP[16]	Section 30: Announced period Section 34: Change of location Section 36: Seasonal water assignment rules	Section 30 of the ROP requires that if it has been six months or more since a passing flow of 1,000 ML per day at the flow reference point, an announced period when water is able to be taken will only be announced 36 hours after the flow peak has passed. This protects the initial flow of planned environmental water following a dry period. Section 34 of the ROP requires that when water allocations with a nil passing flow condition are changed (i.e. traded) to a new location, a condition must be added to require the allocation to take water from a waterhole or weir only when there is a visible passing flow downstream of the waterhole or weir control. This strengthens the protection of planned environmental water in waterholes during dry periods. Section 36 applies this condition to seasonal trades also.
		This index[17]	Explanatory Note 3B of Part 3 of Chapter 5 Index	**Explanatory Note 3B** Planned environmental water in the Warrego-Paroo-Nebine Water Resource Plan area is the remaining share of the water resource that is not in the consumptive water share (i.e. permitted to be taken under the *Water Act 2000* (Qld), Queensland WRP and ROP). To be clear, planned environmental water does not include held environmental water. In addition to the provisions listed for s10.09(1), the rules and arrangements relating to planned environmental water in the WRP are those rules and arrangements specified for the purposes of satisfying section 10.28 of the Basin Plan.

[16] Warrego, Paroo, Bulloo and Nebine Resource Operations Plan February 2016 (Revision 1).
[17] DNRM (2016j) Warrego-Paroo-Nebine Water Resource Plan, November 2016

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text constituting Water Resource Plan that addresses the requirement	Explanatory Notes
		This index	Explanatory Note 3C of Part 3 of Chapter 5 Index	**Explanatory Note 3C** • In the WRP area, the Commonwealth Environmental Water Holder (CEWH) is currently the only holder of held environmental water (HEW) in the WRP area. • The CEWH maintains an ongoing record of its holdings of HEW at https://www.environment.gov.au/water/cewo/portfolio-mgt/holdings-catchment and, subject to this note, the record maintained by the CEWH is the register of HEW for the water resource plan area. • If HEW is acquired by an entity other than the CEWH during the life of the WRP, the chief executive will establish and maintain a register that it will publish at www.dnrm.qld.gov.au that will record all the HEW in the WRP area in accordance with section 10.09(2), or identify a register of HEW which does this.
Division 2—Take for consumptive use				
10.10 Annual determinations of water permitted to be taken	(1) For each SDL resource unit in a water resource plan area, and for each form of take, the water resource plan must set out the methods for determining the maximum quantity of water that the plan permits to be taken for consumptive use during a water accounting period. (2) The method for subsection (1) may include modelling, and must be designed to be applied after the end	Water Accounting Methods Report	Chapter 5: Methods—annual permitted take (s.10.10) to Chapter 5.6 Permitted take from groundwater inclusive Chapter 4.2.2 – Take that is not measured -*basic rights from groundwater* Chapter 6.2: Annual actual take by floodplain harvesting Chapter 6.3: Annual actual take by runoff dams	The report sets out the various methods for determining annual permitted take for the following forms of take: • Supplemented and unsupplemented water allocations from a watercourse — IQQM models WAR1601A, PAR1601A, and NEB1601A • Water licences from a watercourse — IQQM models WAR1601A, PAR1601A, and NEB1601A. • Water permits — specified volume on the permit • Floodplain harvesting authorisations — annual actual take • Runoff dams (including basic rights) — annual actual take • Basic rights from a watercourse – fixed estimate (long-term annual average take)

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text constituting Water Resource Plan that addresses the requirement	Explanatory Notes
	of the relevant water accounting period, having regard to the water resources available during the period. The method must: (a) account for the matters in subsection 10.12(1); and (b) be consistent with the other provisions of the water resource plan.		(including take under basic rights) Appendix B: Method for estimating take from watercourses under basic rights	• Groundwater licences — nominal entitlement • Basic rights from groundwater — fixed estimate (long-term annual average take) Note that the estimation of annual permitted take and annual actual take for floodplain harvesting, farm dams and water licences without a nominal volume is based on opportunity to take and available information. Given that the risk of growth in take in these forms of entitlement has been assessed as low, and the actual volumes of take by these forms of entitlement are also relatively small, the method is considered fit-for-purpose. If future risk assessments identify a change to the risk of growth, the method will be reviewed at that time. The methods used in the Water Accounting Methods Report are different to those used to produce the original Basin Plan 2012 estimates of BDL. In particular, the hydrological models have been improved, and new research undertaken to estimate take by forms of take previously not estimated, such as basic rights.
		Hydrological modelling reports[18]	Reports in their entirety	These reports detail the hydrological model runs WAR1601A, PAR1601A and NEB1601A used to estimate annual permitted take for supplemented and unsupplemented water allocations, and water licences from a watercourse.

[18] Department of Science, Information, Technology and Innovation (DSITI) (2016a), *Warrego River: Warrego River Model Results to Support Basin Plan Requirements*, State of Queensland, January 2016. DSITI (2016b), *Paroo Creek: Paroo Creek Model Results to Support Basin Plan Requirements*, State of Queensland, January 2016. DSITI (2016c), *Nebine Creek: Nebine Creek Model Results to Support Basin Plan Requirements*, State of Queensland, January 2016.

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text constituting Water Resource Plan that addresses the requirement	Explanatory Notes
	(3) The method must: (a) account for the matters in subsection 10.12(1): and (b) be consistent with the other provisions of the water resource plan.	Water Accounting Methods Report	Chapter 5.7 Matters relating to accounting for water	The report sets out the how the required list of matters in s.10.12(1) of the Basin Plan are accounted for.
	(4) The plan must also set out a demonstration that the method relates to the SDL of each resource unit in such a way that, if applied over a repeat of the historical climate conditions, it would result in meeting the SDL for the resource unit, including as amended under section 23B of the Act.	Water Accounting Methods Report	Chapter 5.8 Demonstration of how method relates to the SDL	Chapter 5.8 provides a demonstration of how the methods relate to the SDL for the resource unit. For surface water SDL resource units, the demonstration illustrates how the different methods combined will result in meeting the BDL of each SDL resource unit as described in Column 2 of Schedule 3 of the Basin Plan over a repeat of the historical climate conditions. By limiting take for consumptive use in each SDL resource unit to the BDL in accordance with these methods, and accounting for held environmental water consistently with Appendix C, once the Australian Government has recovered the water necessary to “Bridge the Gap”, the methods combined will meet the SDL in each SDL resource unit. For groundwater SDL resource units, the demonstration shows that the method for annual permitted take, when applied over the historical climate conditions, results in a level of take for consumptive use that is far lower than the SDL for each SDL resource unit. As the methods used to estimate BDL have changed, this has resulted in changes to the estimates of BDL for each surface water SDL resource unit. Section 5.8 sets out Queensland’s proposed new BDL estimates for incorporation into the Basin Plan Schedule 3. Material supporting the proposed new BDL estimates is identified in chapters 5 to 5.7 of the Water Accounting Methods Report.

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text constituting Water Resource Plan that addresses the requirement	Explanatory Notes
				Chapter 7 of the Basin Plan sets out the adjustments to SDLs that can be made under section 23B of the Act. Queensland has no notified supply, efficiency or constraint measures that would require an adjustment to the method for demonstrating the SDL. There may be an adjustment to the shared reduction amounts (Part 3 of Chapter 7). For example, if the amount of water required to be recovered by the Commonwealth Environmental Water Holder (CEWH) in order to meet the revised SDL were increased. This does not require any changes to the IQQM hydrological model. See Appendix C of the Water Accounting Methods Report for a description of how annual permitted take is adjusted to account for held environmental water.
	(5) If, as a result of an amendment under section 23B of the Act, the SDL for a surface water SDL resource unit is expressed as a formula that changes with time, the SDL for subsection (4) is taken to be: (a) for a water accounting period beginning on or after 1 July 2019 — the SDL as it stood on 30 June 2019; and (b) for a water accounting period beginning on or after 1 July 2022 — the SDL as it stood on 30 June 2022; and (c) for a water accounting period beginning on or after 1 July 2024 — the SDL as it stood on 30 June 2024.	*Not applicable*	*Not applicable*	Queensland has no notified supply, efficiency or constraint measures that would require the SDL for a surface water SDL resource unit to be expressed as a formula that changes with time.

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text constituting Water Resource Plan that addresses the requirement	Explanatory Notes
10.11 Rules for take, including water allocation rules	(1) A water resource plan must set out rules (including, if applicable, rules for water allocations) that ensure, as far as practicable, that the quantity of water actually taken from each SDL resource unit for consumptive use in a water accounting period that beginning on or after 1 July 2019 does not (after making any adjustments for the disposal or acquisition of held environmental water) exceed the unit's annual permitted take for the period. (2) To avoid doubt, rules may be designed to ensure that the quantity of water that is actually taken for consumptive use from an SDL resource unit in a water accounting period is less than the annual permitted take.	Queensland WRP[19]	Section 19 Decision not to increase amount of water taken Section 23 Reserve volumes Section 25 Limitation on taking or interfering with water Section 26 Limitation on taking overland flow water Section 29 Limitation on taking or interfering with groundwater	The Queensland WRP ensures that the quantity of water taken does not exceed annual permitted take by limiting management decisions (such as the granting of water entitlements) to those that do not increase the amount of water able to be taken. Whilst s.23 sets an amount of unallocated water to be made available in the plan area, this is still well within the SDL. Sections 25, 26 and 29 place restrictions on the take or interfering of water, take of overland flow and take of groundwater respectively.
		This Index	Explanatory Note 3D of Part 3 of Chapter 5 Index	**Explanatory Note 3D** The responsible person for undertaking the measure in Section 19 of the Queensland WRP is the chief executive (in accordance with Section 10.06 (2) of the Basin Plan).
		ROP[20]	Chapter 2 Cunnamulla Water Supply Scheme. Part 2, Water sharing rules Chapter 3 Rules for unsupplemented water allocations. Part 1, Water	Chapter 2 Part 2 of the ROP sets out the water sharing rules for Cunnamulla Water Supply Scheme, including the formula for calculating announced allocations. Chapter 3 Part 1 sets out the water sharing rules for unsupplemented water allocations, including rules regarding when take can occur.

[19] Water Resource (Warrego, Paroo, Bulloo and Nebine) Plan 2016 (Qld)
[20] Warrego, Paroo, Bulloo and Nebine Resource Operations Plan 2006, Amended February 2016 (Revision 1)

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text constituting Water Resource Plan that addresses the requirement	Explanatory Notes
			sharing and data collection rules for the Upper and Lower Warrego water management areas	
		This Index	Explanatory Note 3E of Part 3 of Chapter 5 Index	**Explanatory Note 3E** The responsible person for undertaking the measure in Chapter 2 is the resource operations licence holder (in accordance with Section 10.06 (2) of the Basin Plan). The responsible person for undertaking the measure in Chapter 3 Part 1(32) is the water allocation holder or any assignee (in accordance with Section 10.06 (2) of the Basin Plan).
10.12 Matters relating to accounting for water	(1) *Please refer to the Water Accounting Methods paper for a list of the specific requirements* (2) Subject to this section, the method may account for other matters (3) For paragraph (1)(d), the water resource plan must account for the disposal and acquisition of held environmental water separately in a way that does not affect the method under section 10.10.	Water Accounting Methods Report	Chapter 5.7 Matters relating to accounting for water	Chapter.5.7 of the Water Accounting Methods report sets out the methods for accounting for the matters identified in Basin Plan section 10.12.

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text constituting Water Resource Plan that addresses the requirement	Explanatory Notes
10.13 Limits on certain forms of take	(1) Subject to this section, a water resource plan must require that the long-term annual average quantity of water that can be taken from a surface water SDL resource unit for consumptive use by: (a) take under basic rights; or (b) take by runoff dams; or (c) net take by commercial plantations; does not exceed the level specified in column 2 of Schedule 3 for that form of take. (2) The quantity specified in subsection (1) for a form of take may be increased above the level specified in column 2 of Schedule 3 for that form of take if *[refer to Basin Plan 2012 for specific requirements*]	Queensland WRP	Section 26: Limitation on taking overland flow water—Act, s 20(2)(b)	Runoff dams — Growth in take by runoff dams for purposes other than basic rights is prevented by not allowing overland flow works built after 2001 to be used for purposes other than those permitted under s.26 of the Queensland WRP. This rule was first put in place by a moratorium in 2001 and subsequently in the Queensland WRP in 2003.
		Water Accounting Methods report	Chapter 5.3: Permitted take by runoff dams (including take under basic rights) Chapter 5.4:Permitted take under basic rights from a watercourse Chapter 5.5: Permitted net take by commercial plantations	Runoff dams (including take under basic rights) — permitted take is assumed to be equal to annual actual take. Growth in take by runoff dams under basic rights is limited by population growth. The area's population has been stable since 2001 and is projected to remain stable for the life of the plan (DNRM 2014d) Basic rights from a watercourse — permitted take is assumed to be equal to actual take. Commercial plantations — there are no commercial plantations in the plan area and permitted take is zero.

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text constituting Water Resource Plan that addresses the requirement	Explanatory Notes
10.14 Effects, and potential effects, on water resources of the water resource plan area	(1) A water resource plan must identify the effect, or potential effect, if any, of the following on the use and management of the water resources of the water resource plan area: (a) the taking of groundwater that is not a Basin water resource resulting in water being removed from a groundwater SDL resource unit in the water resource plan area because of a pre-existing hydrological connection or a hydrological connection created by the process of taking that groundwater; (b) the taking of groundwater that is not a Basin water resource resulting in water that would otherwise flow directly or indirectly into an SDL resource unit in the water resource plan area no longer flowing into that unit. (2) If a water resource plan identifies an effect, or potential effect, of the kind referred to in subsection (1), the water resource plan must set out: (a) a process for	Groundwater background papers[21]	St George Alluvium groundwater background paper - Chapter 1: General Information, Chapter 3: Deep alluvium Warrego Alluvium groundwater background paper – Chapter 3: Groundwater condition Sediments above the Great Artesian Basin groundwater background paper - Chapter 3: Groundwater condition.	A review of the evidence relating to the groundwater SDL units in the water resource plan area found that there is no pre-existing hydrological connection between groundwater that is not a Basin water resource, and groundwater SDL resource units in the WRP area. There are no hydrological connections expected to be created by the taking of groundwater from non-Basin water resources.

[21] DNRM (2016a), *Sediments above the Great Artesian Basin: Groundwater background paper*, State of Queensland, February 2016; DNRM (2016b), *St George Alluvium: Groundwater background paper*, State of Queensland, February 2016; DNRM (2016c), *Warrego Alluvium: Groundwater background paper*, State of Queensland, February 2016

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text constituting Water Resource Plan that addresses the requirement	Explanatory Notes
	monitoring that effect or potential effect; and (b) actions that will be taken to respond to that effect or potential effect. (3) Without limiting paragraph (2)(b), the water resource plan may require a person to hold a water access right in the water resource plan area in relation to the effect, or potential effect, identified.			
Division 3—Actual take				
10.15 Determination of actual take must be specified	*Please refer to methods paper for detail of specific requirements under 10.15*	Water Accounting Methods Report	Chapter 6 Annual actual take Section 4.2.2: Take that is not measured Appendix B: Method for estimating take from watercourses under basic rights	Chapter 6 of the Water Accounting Methods paper sets out the methods for determining annual actual take. Where estimates are used, the method for producing these estimates is consistent with the method used under subsection 10.10(1). The methods used also address the disposal of held environmental water Section 10.15(4)(b) regarding the release of Great Artesian Basin water into Basin SDL units does not apply in the WRP area.

5.4 Part 4—The sustainable use and management of water resources

Note: Any sections of the instruments or texts not explicitly identified in this table do not form part of this Water Resource Plan.

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text constituting Water Resource Plan that addresses the requirement	Explanatory Notes
Part 4—The sustainable use and management of water resources				
Division 1—Sustainable use and management				
10.16 Sustainable use and management of water resources	This Part sets out the requirements in relation to the sustainable use and management of water resources of the water resource plan area within the long-term annual diversion limit for an SDL resource unit.	*Not applicable*	*Not applicable*	There is no specific requirement to be addressed in this section.
Division 2—Surface water				
10.17 Priority environmental assets and priority	1) A water resource plan must be prepared having regard to whether it is necessary for it to include rules which ensure that the operation of the plan does not compromise the meeting of environmental watering	Queensland WRP[22]	Section 11: Ecological outcomes Schedule 4: Environmental flow objectives and performance indicators	The priority environmental assets and priority ecosystem functions for Warrego, Paroo and Nebine catchments are listed as specific ecological outcomes for the Queensland WRP. These ecological outcomes were developed with regard to the results of community consultation and, technical assessments for the Queensland WRP and built on the basis of the previous Queensland WRP (2003).

[22] Water Resource (Warrego, Paroo, Bulloo and Nebine) Plan 2016 (Qld)

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text constituting Water Resource Plan that addresses the requirement	Explanatory Notes
ecosystem functions	requirements of priority environmental assets and priority ecosystem functions.	Environmental Assessment Report–Stage 2[23]	Chapter 5: Results	A risk assessment was conducted to assess the risk to ecological assets and the effectiveness of the Water Resource (Warrego, Paroo, Nebine and Bulloo) Plan 2003. Overall the assessment identified low risk to surface water ecological assets from existing water resource management activities in the plan area. Some recommendations were put forward, for instance applying cease to pump waterhole depth thresholds. Long Term Watering Plan (LTWP)[24] identifies the environmental watering requirements that will achieve the targets and objectives for priority environmental assets and priority ecosystem functions. Environmental watering requirements are based on the environmental flow objectives and performance indicators in the Queensland WRP, and are established using eco-hydraulic models with indicator ecological assets to represent different plan outcomes.
		Risk Assessment of Insufficient Water Available for the Environment[25]	Chapter 5: Results and discussion Appendices 1 to 3 Risk registers	A risk assessment was conducted to examine the risk of insufficient water being available for the environment. All risks to the environment associated with changes to surface water availability were assessed as low. This was due to current and projected low levels of water resource development, and forecast population stability in the Water Resource Plan area.

[23] DSITIA (2013a), *Review of Water Resource (Warrego, Paroo, Bulloo and Nebine) Plan 2003 and Resource Operations Plan: Environmental Assessment Report – Stage 2*, State of Queensland, October 2013
[24]DNRM (2016i), *Murray Darling Basin Plan Long Term Watering Plan for the Warrego, Paroo and Nebine Water Catchment*, State of Queensland, January 2016
[25]DNRM (2016h), *Warrego, Paroo, Bulloo and Nebine Water Resource Plan Review: Risk assessment of insufficient water available for the environment*, State of Queensland, 2016

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text constituting Water Resource Plan that addresses the requirement	Explanatory Notes
		Implementation Review Report[26]	Chapter 4 Assessment of plan outcomes	A review of the previous Queensland WRP (2003) and Resource Operations Plan (ROP) (2006) was conducted. This incorporated the results of the environmental assessment with assessments of socioeconomic outcomes. Attachment 2 – Assessment of Plan Outcomes, in this document, contains the findings of the assessment. Broadly, the review found that water availability continues to exceed usage, that the demand for water in the area is unlikely to increase, and that sufficient flows are available for the environment. Operation of Allan Tannock Weir was found not to have impacted on specific ecological outcomes of the plan.
		Overview report[27]	Appendix B, Section 6:Technical Assessments Addressing the recommendations of technical assessments in the draft plans -Table C3	Table C3 includes a section on environmental assessment recommendations and how regard has been had to the risks identified in the Environmental Assessment Report – Stage 2 report.

[26]DNRM (2013), *Implementation Review Report: Warrego, Paroo, Bulloo and Nebine Water Resource Plan and Resource Operations Plan*, State of Queensland, November 2013

[27] DNRM (2014a), *Warrego, Paroo, Bulloo and Nebine draft Water Resource Plan and amended resource operations plan: Overview report*, State of Queensland, September 2014

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text constituting Water Resource Plan that addresses the requirement	Explanatory Notes
		This index[28]	Explanatory note 4A of Part 4 of Chapter 5 Index	**Explanatory note 4A** As demonstrated in the documents above, the risk that the operation of the plan compromises environmental watering requirements is low. The Queensland WRP and LTWP identify the priority environmental assets and functions and their watering requirements. The Environmental Assessment Report, Risk Assessment and Implementation Review Report clearly identify that the previous Queensland WRP (2003) resulted in a low risk in terms of meeting environmental watering requirements. As such, the focus of this Water Resource Plan is on maintaining and refining the rules established in the previous Queensland WRP (2003).
	2) Without limiting subsection (1), regard must be had to whether it is necessary for the rules to prescribe: a) the times, places and rates at which water is permitted to be taken from a surface water SDL resource unit; and b) how water resources in the water resource plan area must be managed and used.	This index	Explanatory note 4B of Part 4 of Chapter 5 Index	**Explanatory note 4B** The rules were developed with regard to the results of community consultation and, technical assessments for the Queensland WRP and built on the basis of the previous Queensland WRP (2003). As the rules in the previous Queensland WRP (2003) were found to be resulting in a low risk of compromising environmental watering requirements, it was not considered necessary to substantially change those rules. The new Queensland WRP and ROP have therefore maintained the rules, with some minor improvements. The principal rules by which environmental watering requirements are protected are described below and further explained in the LTWP.
	3) If the outcome of the requirement in subsection (1) is that such rules	Queensland WRP	Chapter 4: Objectives and performance indicators	Chapter 4 of the Queensland WRP specifies the objectives and performance indicators required to help achieve the Queensland WRP's ecological, economic, Indigenous and social outcomes. The

[28] DNRM (2016j) Warrego-Paroo-Nebine Water Resource Plan, November 2016

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text constituting Water Resource Plan that addresses the requirement	Explanatory Notes
	are necessary, the water resource plan must include those rules.		Chapter 5: Strategies for achieving outcomes Schedule 4: Environmental flow objectives and performance indicators Schedule 5: Reserves for granting unallocated water	environmental flow objectives and performance indicators relate to mean annual flow, days in no-flow waterhole periods, days in low flow periods, days between fish migration flow events, days with river-forming flow and days between floodplain inundation periods. Chapter 5 of the Queensland WRP sets out the broad strategies to achieve the objectives of the plan. These include a limit on the amount of water available for extraction, and a requirement that all management decisions are consistent with the objectives of the plan. Schedule 4 of the Queensland WRP identifies the environmental flow objectives and performance indicators. Schedule 5 of the Queensland WRP identifies the volumes of unallocated water available for extraction.
		ROP[29]	Chapter 2: Cunnamulla Water Supply Scheme Chapter 3: Rules for unsupplemented water allocations Chapter 4, Part 1: Dealing with water licence applications Chapter 4, Part 2: Granting water licences for taking overland flow Chapter 5: Monitoring and reporting	The ROP sets out the day to day rules that manage the take of water within the Plan area, to ensure that the ecological, economic, Indigenous and social outcomes of the Queensland WRP can be achieved. These rules are developed with regard to the results of community consultation, technical assessments for the Queensland WRP and the review of implementation of the previous Queensland WRP and ROP. For instance, section 34 requires a pass flow condition to be applied to water allocations with a nil pass flow condition when they are moved to a new location

[29] Warrego, Paroo, Bulloo and Nebine Resource Operations Plan 2006, Amended February 2016 (Revision 1)

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text constituting Water Resource Plan that addresses the requirement	Explanatory Notes
		This Index	Explanatory note 4C of Part 4 of Chapter 5 Index	**Explanatory Note 4C** The responsible person for undertaking the measure in Chapter 2of the Queensland ROP is the resource operations licence holder, in accordance with Section 10.06 (2) of the Basin Plan. The responsible person for undertaking the measure in Chapter 3 Part 1 (32) of the Queensland ROP is the water allocation holder or any assignee, in accordance with Section 10.06 (2) of the Basin Plan.
		Not for accreditation	*Not for accreditation*	Chapters 3.5 and 4 of the LTWP includes environmental watering requirements for the identified assets and functions based on the environmental flow objectives and performance indicators in the Queensland WRP. Table 3 in section 4 provides the environmental watering requirements for each asset and function identified in the Queensland WRP.
Division 3—Groundwater				
10.18 Priority environmental assets dependent	1) A water resource plan must be prepared having regard to whether it is necessary for it to include rules which ensure that, for priority environmental assets and priority ecosystem functions that depend on	This Index	Explanatory note 4D of Part 4 of Chapter 5 Index	**Explanatory Note 4D** No priority environmental assets or priority ecosystem functions dependent on groundwater were identified in the plan area. Therefore it is not considered necessary to include particular kinds of rules listed in subsection 2. Therefore no rules were included in the WRP..

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text constituting Water Resource Plan that addresses the requirement	Explanatory Notes
on groundwater	groundwater, the operation of the plan does not compromise the meeting of environmental watering requirements. 2) Without limiting subsection (1), regard must be had to whether it is necessary for the water resource plan to include rules that specify: a) the times, places and rates at which water is permitted to be taken from a groundwater SDL resource unit; and b) resource condition limits, being limits beyond which the taking of groundwater will, for a priority environmental asset that depends on groundwater, compromise an environmental watering requirement; and c) restrictions on the water permitted to be taken (including the times, places and rates at which water may be taken) in order to prevent a resource condition limit from being exceeded. 3) If the outcome of the requirement in subsection (1) is that such rules	CSIRO and SKM Report[30]	Chapter 1.9: Sediments Above the Great Artesian Basin: Warrego-Paroo-Nebine (G872) Chapter: 1.10: Warrego Alluvium (G878) Chapter: 1.13: St George Alluvium: Warrego-Paroo-Nebine (G875)	This report examined the risk that extraction will impact on key environmental assets, ecological functions, and the productive base of the aquifer. There are three aquifer formations in the Plan area – the sediments above the Great Artesian Basin, Warrego Alluvium and the St George Alluvium. The report informed the conclusion that there are no priority environmental assets or priority ecosystem functions dependent on groundwater in the plan area.
		Environmental Assessment Report –Stage 1[31]	Chapter 3.3 Groundwater dependent ecological assets	The Stage 1 environmental assessment identified a lack of information on groundwater dependent ecosystems (GDEs) within the Plan area. Some terrestrial vegetation not related to plan outcomes may be dependent on groundwater. No wetlands or groundwater springs dependent on water from Plan area aquifers were identified. There is no immediate intent to conduct further study of GDEs because the risk to GDEs is considered low due to the very low levels of extraction and low levels of anticipated growth in extraction.

[30] Commonwealth Scientific and Industrial Research Organisation and Sinclair Knight Merz (2010), *Sustainable Extraction Limits Derived from the Recharge Risk Assessment Method – Queensland*, report to Murray-Darling Basin Authority, December 2010.
[31] DSITIA (2013b), *Review of Water Resource (Warrego, Paroo, Bulloo and Nebine) Plan 2003: Environmental Assessment Report – Stage 1*, State of Queensland, October 2013

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text constituting Water Resource Plan that addresses the requirement	Explanatory Notes
	are necessary, the water resource plan must include those rules.			
10.19 Groundwater and surface water connections	1) A water resource plan must be prepared having regard to whether it is necessary for it to include rules which ensure that, for groundwater that has a significant hydrological connection to surface water, the operation of the plan does not compromise the meeting of environmental watering requirements (for example, base flows). 2) Without limiting subsection (1), regard must be had to whether it is necessary for the water resource	Groundwater background papers[32]	Sediments above the Great Artesian Basin groundwater background paper - Chapter 3: Groundwater condition. St George Alluvium groundwater background paper - Chapter 2: Shallow alluvium Warrego Alluvium groundwater background paper – Chapter 3: Groundwater condition	The Groundwater background papers provide evidence relating to the three groundwater SDL units.

[32] DNRM (2016a), *Sediments above the Great Artesian Basin: Groundwater background paper*, State of Queensland, February 2016; DNRM (2016b), *St George Alluvium: Groundwater background paper*, State of Queensland, February 2016; DNRM (2016c), *Warrego Alluvium: Groundwater background paper*, State of Queensland, February 2016

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text constituting Water Resource Plan that addresses the requirement	Explanatory Notes
	plan to include rules that specify: a) the times, places and rates at which water is permitted to be taken from a groundwater SDL resource unit; and b) resource condition limits, being limits beyond which the taking of groundwater will compromise the discharge of water into any surface water resource; and c) restrictions on the water permitted to be taken (including the times, places and rates at which water may be taken) in order to prevent a resource condition limit from being exceeded. 3) If the outcome of the requirement in subsection (1) is that such rules are necessary, the water resource plans must include those rules.			
		This index	Explanatory note 4E of Part 4 of Chapter 5 Index	**Explanatory Note 4E** A review of the evidence relating to the three groundwater SDL units found that there are no known significant hydrological connections between groundwater and surface water in the Water Resource Plan area. No rules were therefore included in the Water Resource Plan.
10.20 Productive base of groundwater	1) A water resource plan must be prepared having regard to whether it is necessary for it to include rules which ensure that: a) there is no structural damage to an aquifer (whether within or outside the water resource plan area) arising from	Risk assessment of insufficient water available for surface water and groundwater users[33]	Chapter 5: Results	The risk assessment examined six risk factors that may reduce groundwater levels at aquifer or local scale, thereby impacting on water availability for groundwater users. Given the very low levels of extraction permitted from each aquifer, the risk of structural damage and changes to hydraulic relationships was considered insignificant and not examined further. No treatment was proposed.

[33] DNRM (2016g), *Warrego, Paroo, Bulloo and Nebine Water Resource Plan Review: Risk assessment of insufficient water available for surface water and groundwater users*, State of Queensland, February 2016

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text constituting Water Resource Plan that addresses the requirement	Explanatory Notes
	take within the long-term annual diversion limit for an SDL resource unit; and b) hydraulic relationships and properties between groundwater and surface water systems, between groundwater systems, and within groundwater systems are maintained. 2) Without limiting subsection (1), regard must be had to whether it is necessary for the water resource plan to include rules that specify: a) the times, places and rates at which water is permitted to be taken from a groundwater SDL resource unit; and b) any zones in the water resource plan area where continued groundwater extraction will result in a long-term decline in groundwater levels; and c) measures to prevent any long-term decline in groundwater levels in that zone, except where the groundwater is a non-renewable groundwater resource; and d) for a non-renewable groundwater resource – the planned rate of decline in groundwater levels and the anticipated groundwater levels after 50 years from the commencement			The St George Alluvium (deep) aquifer in the water resource plan area is connected to the St George Alluvium (deep) in the Condamine-Balonne Water Resource Plan area. Permitted take in the St George Alluvium (deep) in the Condamine-Balonne is equal to SDL, and there was found to be a high risk of growth in take in the St George Alluvium (deep) in the Warrego-Paroo-Nebine Water Resource Plan area.
		This index	Explanatory note 4F of Part 4 of Chapter 5 Index	**Explanatory note 4F** It was considered necessary to include rules to prevent structural damage to the aquifer and maintain hydraulic relationships and properties in the St George Alluvium (deep). Regard was had to whether it was necessary to include rules of the kind specified in s10.20(2)(a-f) in the St George alluvium as set out below. a. It was considered unnecessary to include rules about times, places and rates as there are no water entitlements to take water in the SDL unit and there is limited take under basic rights. The Queensland WRP does not provide for the issue of any new entitlement. b. The deep portion of the St George alluvium was identified as a zone in the plan area where continued groundwater extraction will result in a long term decline in groundwater levels, therefore it was considered necessary to manage this zone as a separate groundwater unit in the Queensland WRP. c. It was considered necessary to include measures to prevent long term decline in groundwater levels in the St George alluvium (deep) d. Rules for nonrenewable groundwater resources are not applicable to this plan area

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text constituting Water Resource Plan that addresses the requirement	Explanatory Notes
	of the water resource plan; and e) resource condition limits, being limits beyond which the taking of groundwater from the SDL resource unit will compromise the objectives in paragraphs (1)(a) and (b); and f) restrictions on the water permitted to be taken (including the times, places and rates at which water may be taken) in order to prevent a resource condition limit from being exceeded.			e. It was considered unnecessary to include rules about resource condition limits as there are no water entitlements to take water in the SDL unit and there is limited take under basic rights. f. Since resource condition limits were considered unnecessary, restrictions to prevent them being exceeded were also considered unnecessary. It was not considered necessary to include the kinds of rules specified in s10.20(2)(a-f) for the remaining SDL resource units because there are only small volumes of entitlement to take water in the Warrego Alluvium (232 ML) and the Sediments above the Great Artesian Basin (215 ML). These water entitlements are not tradable (seasonally or permanently) and are limited by stated annual volumes. No medium or high risks were identified in these SDL resource units. Though the Queensland WRP allows for the granting of new water entitlements to take water from the Warrego Alluvium and the Sediments above the Great Artesian Basin, the total volumes that may be granted are stated and are conservative (2000 ML for the Warrego Alluvium and 8000 ML for the Sediments above the Great Artesian Basin). Even if the full volume of new entitlement allowable under the Queensland WRP was issued, extraction under the entitlement would not lead to long-term decline in groundwater levels for the respective resources. Given the high risk of growth in take in the St George Alluvium (deep), it was considered necessary for the Water Resource Plan to include a rule to mitigate this risk. This rule is described below.

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text constituting Water Resource Plan that addresses the requirement	Explanatory Notes
	3) If the outcome of the requirement in subsection (1) is that such rules are necessary, the water resource plan must include those rules.	Queensland WRP	Schedule 5: Reserves for granting unallocated water Section 19: Decision to not increase amount of water taken Section 23: Reserve volumes Section 29: Limitation on taking or interfering with groundwater—Act, s 20(2)(c)	Only a small percentage of the volume that is allowed to be taken under the Basin Plan will be available for take in the Queensland WRP. This will help to ensure that the productive base of groundwater is maintained into the future. There is no unallocated water identified in the St George Alluvium (deep), to protect the productive base.
		This Index	Explanatory note 4G of Part 4 of Chapter 5 Index	**Explanatory Note 4G** The responsible person for undertaking the measure in Section 19 and in Section 20 of the Queensland WRP is the chief executive (in accordance with Section 10.06 (2) of the Basin Plan).
10.21 Environmental outcomes relating to groundwater	1) A water resource plan must be prepared having regard to whether it is necessary for it to include rules to prevent elevated levels of salinity and other types of water quality degradation within a groundwater SDL resource unit. 2) Without limiting subsection (1), regard must be had to whether it is necessary for the water resource	HWMP[34]	Section 8: Risk Assessment of water being of a quality unsuitable for use	With the exception of the St George Alluvium (deep), the HWMP found only a low risk of elevated levels of salinity, nutrients or other water quality degradation within the groundwater SDL resource units of the plan area. Elevated levels of salinity due to possible increases in take were rated as moderate risk for the St George Alluvium (deep).
		This index	Explanatory note 4H of Part 4 of Chapter 5 Index	**Explanatory note 4H**

[34] Department of Heritage and Protection (DEHP) (2016a), *Healthy Waters Management Plan: Warrego, Paroo, Bulloo and Nebine Basins*, State of Queensland, February 2016

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text constituting Water Resource Plan that addresses the requirement	Explanatory Notes
	plan to include rules that specify: a) the times, places and rates at which water is permitted to be taken from a groundwater SDL resource unit; and b) resource condition units, being limits beyond which the taking of groundwater from the groundwater SDL resource unit will result in an elevated level of salinity or another type of water quality degradation; and c) restrictions on the water permitted to be taken (including the times, places and rates at which water may be taken) in order to prevent a resource condition limit from being exceeded; and d) a requirement to establish and maintain a register which identifies the sites of bores used to monitor salinity or other water quality characteristics in the groundwater SDL resource unit.			It was considered necessary to include rules to prevent elevated levels of salinity and other types of water quality degradation in the St George Alluvium (deep). Regard was had to whether it was necessary to include rules of the kind specified in s10.21 (2)(a-f) in the St George alluvium as set out below. a. It was considered unnecessary to include rules about times, places and rates as there are no water entitlements to take water in the SDL unit and there is limited take under basic rights. The Queensland WRP does not provide for the issue of any new entitlement. b. It was considered unnecessary to include rules about resource condition limits as there are no water entitlements to take water in the SDL unit and there is limited take under basic rights. c. Since resource condition limits were considered unnecessary, restrictions to prevent them being exceeded were also considered unnecessary. d. Since there is no take, salinity monitoring bores are not considered necessary It was not considered necessary to include the kinds of rules specified in s10.21(2)(a-d) for the remaining SDL resource units because there are only small volumes of entitlement to take water in the Warrego Alluvium (232 ML) and the Sediments above the Great Artesian Basin (215 ML). There is a low risk of elevated level of salinity or another type of water quality degradation. These water entitlements are not tradable (seasonally or permanently) and are limited by stated annual volumes. No medium or higher risks were identified in these SDL resource units.

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text constituting Water Resource Plan that addresses the requirement	Explanatory Notes
	3) If the outcome of the requirement in subsection (1) is that such rules are necessary, the water resource plan must include those rules.	Queensland WRP	Schedule 5: Reserves for granting unallocated water Section 19: Decision to not increase amount of water taken Section 23: Reserve volumes Section 29: Limitation on taking or interfering with groundwater—Act, s 20(2)(c)	Only a small percentage of the volume that is allowed to be taken under the Basin Plan will be available for take in the Queensland WRP. This will help to ensure that water quality in the groundwater SDL resource units is protected. No unallocated water was released in the St George Alluvium (deep), to help mitigate the moderate salinity risk in that aquifer.
		This Index	Explanatory Note 4I of Part 4 of Chapter 5 Index	**Explanatory Note 4I** The responsible person for undertaking the measure in Section 19 of the Queensland WRP is the chief executive (in accordance with Section 10.06 (2) of the Basin Plan).
Division 4—How requirements have been met				
10.22 Description of how requirements have been met	A water resource plan must: a) describe what was done to comply with the requirements in this Part; and b) if a risk of a kind referred to in subsection 10.41(1) has been identified in relation to the water resources of the water resource plan area – explain why rules addressing the risk have or have not been included in the plan.	This index	Explanatory note 4J of Part 4 of Chapter 5 Index	**Explanatory note 4J** The requirements of Part 4 have been met through undertaking risk assessments, environmental assessments and consultation and development of the rules based on the findings of the assessments. For further details refer to information in 10.17 to 10.21 above, and Part 9 of this index (particularly section 10.43). With the exception of the moderate risk to the St George Alluvium (deep) in the Nebine, all risks referred to in subsection 10.41(1) are rated as low. It was not considered necessary therefore to insert additional new rules in the Queensland WRP and ROP to constrain

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text constituting Water Resource Plan that addresses the requirement	Explanatory Notes
				growth. Rules to address the salinity and productive risk to the St George Alluvium (deep) were included in the Water Resource Plan.

5.5 Part 5—Interception activities

Note: Any sections of the instruments or texts not explicitly identified in this table do not form part of this Water Resource Plan.

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text constituting Water Resource Plan that addresses requirement	Explanatory Notes
10.23 Listing types of interception activity	1) A water resource plan must, having regard to the risk identification and assessment conducted for section 10.41, specify whether there are any types of interception activity in the water resource plan area which have the potential to have a significant impact on: (a) the water resources of the water resource plan area; or (b) water resources which are hydrologically connected to the water resources of the water resource plan area; whether on an activity-by-activity basis, or cumulatively. 2) If there are any such types of interception activity, the water resource plan must list those types.	Risk assessment of insufficient water available for surface water and groundwater users[35]	Section 5.2.4: Growth in surface water interception (including stock and domestic, plantation and land rehabilitation Section 5.3.3: Interception of through flow from CSG and mining activity and growth in groundwater take for mining purposes	A risk assessment was carried out to evaluate risks to current and future water resources for surface water and groundwater users. The risk assessment was carried out in accordance with AS/NZS ISO 31000:2009 and section 10.43 of the Basin Plan. It examined three surface water risk factors – surface water diversions (including floodplain harvesting), runoff dams (stock and domestic dams), commercial plantations, and change in land use for rehabilitation. All of these were assessed as low risk due to negligible population growth, no known demand for plantations, and minimal existing rehabilitation works. No growth in surface water diversions is permitted under the existing WRP, as previously discussed. The risk assessment also examined the risk of interception by coal seam gas and mining activity. This was assessed as low risk due to minimal exploration and production activity in the plan area. The interception activities considered in this risk assessment do not have the potential to have a significant impact on the water resources of the plan area or hydrologically connected water resources.
	3) For the purpose of determining whether a type of interception	This index	Explanatory note 5A of Part 5 of Chapter 5 Index	**Explanatory note 5A**

[35] DNRM (2016g), *Warrego, Paroo, Bulloo and Nebine Water Resource Plan Review: Risk assessment of insufficient water available for surface water and groundwater users*, State of Queensland, February 2016

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text constituting Water Resource Plan that addresses requirement	Explanatory Notes
	activity is of the kind referred to in subsection (1), regard must be had to the following factors: (a) the location of particular activities of that type in the water resource plan area; (b) the impact of the type of activity on the availability of: (i) the water resources of the water resource plan area, and (ii) any water resources which are hydrologically connected to the water resources of the water resource plan area; (c) the projected growth of the type of activity over the period for which the water resource plan will have effect.			After regard was had to the results of community consultation and, technical assessments for the Queensland WRP, it was determined that no interception activities in the plan area were found to have the potential to have a significant impact on the water resources of the plan area or hydrologically connected water resources relevant for meeting the requirement in section 10.23 of the Basin Plan.
10.24 Monitoring impact of interception activities	If a water resource plan includes a list of the kind referred to in subsection 10.23(2), the plan must set out, in respect of each type of interception activity listed, a process for monitoring the impact of that type of activity on: (a) the water resources of the water resource plan area; and (b) water resources which are hydrologically connected	This index[36]	Explanatory note 5B of Part 5 of Chapter 5 Index	**Explanatory note 5B** No interception activities in the plan area were found to have the potential to have a significant impact on the water resources of the plan area or hydrologically connected water resources. Section 10.24 therefore is not applicable to this WRP.

[36] DNRM (2016j) Warrego-Paroo-Nebine Water Resource Plan, November 2016

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text constituting Water Resource Plan that addresses requirement	Explanatory Notes
	to the water resources of the water resource plan area.			
10.25 Actions to be taken	1) A water resource plan must identify actions that will be taken in the event that monitoring under section 10.24 shows that: (a) an impact of a type of interception activity compromises the meeting of an environmental watering requirement; or (b) an impact of several types of activity together compromises the meeting of an environmental watering requirement; or (c) there is an increase in the quantity of water being intercepted by a type of activity; after the commencement of the water resource plan. 2) Subsection (1) does not apply if the relevant outcome in paragraph (1)(a), (b) or (c) is accounted for by the method under subsection 10.10(1)	*Not applicable*	*Not applicable*	This section is not applicable given the conclusions in s10.23. The *Water Act 2000* [37](Qld) Chapter 2, Part 3, Division 2, Subdivision 5: Amending, or preparing new, water resource plans requires the Minister to amend or replace the WRP if the Minister is satisfied that the plan's outcomes are not being achieved, or its objectives or strategies are no longer appropriate for the plan area. This would be the case if evidence shows an increase in interception activity that is likely to compromise the plan's ability to achieve its environmental outcomes. Sections 53 and 54 of the *Water Act 2000* (Qld) require the Minister to report on how each Queensland WRP is performing. This report must examine how well the Queensland WRP is achieving its objectives. This report informs whether or not the Minister should amend or replace the Queensland WRP.

[37] *Water Act 2000(Qld),* current as at 2 October 2015

5.6 Part 6—Planning for environmental watering

Note: Any sections of the instruments or texts not explicitly identified in this table do not form part of this Water Resource Plan.

BP Section	BP requirement	Instrument addressing requirement	Part of instrument or text constituting Water Resource Plan that addresses requirement	Explanatory Notes
10.26	(1) A water resource plan must provide for environmental watering to occur in way that (a) is consistent with (i) the environmental watering plan and (ii) Basin-wide environmental watering strategy and (b) contributes to the achievement of the objectives in Part 2 of Chapter 8	Queensland WRP[38]	Section 8: Nodes Section 11: Ecological outcomes Section 15: Environmental flow objectives and performance indicators Chapter 5: Strategies for achieving outcomes Schedule 3: Nodes Schedule 4: Environmental flow objectives and performance indicators	The outcomes, strategies and environmental flow objectives in the Queensland WRP provide for environmental watering to occur in a way that is consistent with the environmental watering plan and the Basin-side environmental watering strategy. Queensland follows a rules-based approach to environmental watering in order to achieve the ecological outcomes in the Queensland WRP. The rules-based approach achieves the protection of ecosystems and ecosystem functions relying on environmental water on both a long-term and annual basis in line with the objectives in Part 2 of Chapter 8 by: • ensuring the water resource development does not increase beyond the levels set by the plans, • limiting divergence from natural flow regimes over the full range of flows to maintain important channel-forming and ecological functions, and • maintaining the natural variability of flow from year to year, recognising intermittent streams which are characterised by long periods of no or low flow interspersed with periods of high flow. Queensland WRP strategies to achieve the outcomes and that contribute to the objectives of the Basin Plan include the following: • decisions cannot be made that would increase the average volume of surface water or the nominal entitlement of

[38] Water Resource (Warrego, Paroo, Bulloo and Nebine) Plan 2016 (Qld)

BP Section	BP requirement	Instrument addressing requirement	Part of instrument or text constituting Water Resource Plan that addresses requirement	Explanatory Notes
				groundwater taken under the plan (s19) decisions must be consistent with the environmental flow objectives (s20), which cover a range of flow components from no flow to floodplain inundation. Maintaining flows and designating the plan area as a no-growth catchment ensures that water-dependent ecosystems and ecosystem functions are protected to the extent possible through the water planning framework. The identification of priority assets and functions in the Queensland WRP ecological outcomes and the setting of environmental flow objectives and performance indicators ensure that environmental water is planned and prioritised to the extent possible in an unregulated catchment both over the long-term and on an annual basis. In relation to the held environmental water managed by the Commonwealth Environmental Water Holder (CEWH), the Queensland WRP contains a water allocation security objective (WASO) that provides a given specification for the performance of an unsupplemented water allocation (including water entitlements held by the CEWH). If performance is impacted, compensation may be payable under the *Water Act 2000* (Qld). The resilience of ecosystems to climate change and other risks is addressed in the environmental assessments of the ecological indicators that underpin the Queensland WRP outcomes.

BP Section	BP requirement	Instrument addressing requirement	Part of instrument or text constituting Water Resource Plan that addresses requirement	Explanatory Notes
		This Index[39]	Explanatory Note 6A of Part 6 of Chapter 5 Index	**Explanatory Note 6A** The responsible person for undertaking the measures in Chapter 5 of the Queensland WRP is the chief executive (in accordance with Section 10.06 (2) of the Basin Plan).
		ROP[40]	Chapter 2: Cunnamulla Water Supply Scheme Chapter 3: Rules for unsupplemented water Chapter 4: Water licences Chapter 5: Monitoring and reporting	The ROP rules and conditions on licences and entitlements, including monitoring and reporting requirements, are developed in line with the strategies outlined in the Queensland WRP, thus contributing to the protection to flows and ecosystems in line with the outcomes of the Queensland WRP and objectives of the environmental watering plan.
		This Index	Explanatory Note 6B of Part 6 of Chapter 5 Index	**Explanatory Note 6B** The responsible person for undertaking the measure in Chapter 2 of the Queensland ROP is the resource operations licence holder, in accordance with Section 10.06 (2) of the Basin Plan.
		Not applicable	*Not applicable*	The LTWP[41] for the Water Resource Plan catchments describes how existing Queensland legal instruments and supporting documents together provide for environmental watering for the plan area in line with Basin Plan requirements.

[39] DNRM (2016j) Warrego-Paroo-Nebine Water Resource Plan, November 2016
[40] Warrego, Paroo, Bulloo and Nebine Resource Operations Plan 2006, Amended February 2016 (Revision 1)
[41] DNRM (2016i), *Murray Darling Basin* Plan *Long Term Watering Plan for the Warrego-Paroo-Nebine Catchment*, State of Queensland, February 2016

BP Section	BP requirement	Instrument addressing requirement	Part of instrument or text constituting Water Resource Plan that addresses requirement	Explanatory Notes
				Appendices 2, 3 and 4 of the LTWP provides an explanation of how all the instruments in the Water Resource Plan are consistent with the environmental watering plan and basin-wide environmental watering strategy, as well as contributing to the objectives in Part 2 of Chapter 8.
		Not applicable	*Not applicable*	DSITIA 2013c[42] The environmental assessments prepared as part of the water planning process also contribute to the provision of environmental water in line with the environmental watering plan and Basin-wide watering strategy. The assessments include a risk assessment of the ecological indicators that underpin the Queensland WRP outcomes, which is consistent with the objective in the Basin Plan for ensuring ecosystems are resilient to climate change and other risks. As outlined in the section on risk assessment methods, the risk assessment is based on an understanding of thresholds (step change or critical failure points) for the ecological indicators. Thresholds of concern are developed that represent the frequency of opportunities required to protect indicator viability. Two surface water development scenarios were assessed: pre-development and full entitlement. Simulated daily flow time series were modelled for the two scenarios over a 122 year simulation period. Results of the risk assessment are provided for each catchment. These sections list the number of assessment nodes and how the identified ecological assets are linked to hydrology.

[42] DSITIA (2013c), *Review of Water Resource (Warrego, Paroo, Bulloo and Nebine) Plan 2003: Environmental risk assessment for selected ecological assets*, State of Queensland, October 2013

BP Section	BP requirement	Instrument addressing requirement	Part of instrument or text constituting Water Resource Plan that addresses requirement	Explanatory Notes
	(2) WRP must be prepared having regard to the most recent version of the LTWP and the views of local communities	LTWP[43]	Chapter 2 Background Chapter 3 Queensland's approach to the long-term watering plan Chapter 6 Consultation, operational constraints and co-operative arrangements	The instruments and supporting documents that were prepared as part of the Water Resource Plan provide for the environmental watering arrangements that are consistent with and explained in the LTWP. For the Water Resource Plan catchments, the LTWP was prepared at the same time as the Water Resource Plan and mirrors the rules-based approach to environmental water under the planning framework. The LTWP also summarises the consultation undertaken with local communities during the review of the Queensland WRP and ROP and consultation with other stakeholders such as NSW and the Commonwealth Environmental Water Office.
		Consultation report[44]	Whole of report	The consultation report is required under the Queensland Water Act as part of the review of the Queensland WRP. This report documents the consultation process undertaken by the department as well as summarising the issues raised during the consultation process and how these issues were considered by the Minister in finalising the plans. It includes the stakeholders that were involved and a summary of the main issues that were raised.
10.27	(2) WRP for each of the areas must provide for the co-ordination of environmental watering between the 2 areas	Consultation report	Chapter:1. Introduction Chapter 2: Consultation and Submissions Chapter 4: Other changes made	The consultation report summarises the consultation that was undertaken in the drafting of the Queensland WRP and ROP, including with NSW and other stakeholders.

[43] DNRM (2016i), *Murray-Darling Basin Long Term Watering Plan for the Warrego-Paroo-Nebine Catchment,* State of Queensland, February 2016.
[44] DNRM (2016d), *Warrego, Paroo, Bulloo and Nebine water resource plan and amended resource operations plan: Consultation report*, State of Queensland, February 2016.

BP Section	BP requirement	Instrument addressing requirement	Part of instrument or text constituting Water Resource Plan that addresses requirement	Explanatory Notes
		LTWP	Chapter 6 Consultation, operational constraints and co-operative arrangements	Due to the unregulated nature of the catchments, there are limited opportunities for the coordination of delivery of environmental water and these mainly consist of consulting on the preparation of the Long Term Watering Plan (LTWP). Cooperative arrangements each year are further set out in the Queensland Annual Environmental Watering Priorities. The LTWP summarises the consultation that has taken place with NSW in the preparation of the Queensland WRP, ROP and LTWP. For example, consultation occurred with NSW via the Intersecting Streams Working Group for the development of flow sharing arrangements with NSW for the Lower Warrego. Discussions clarified Queensland's approach to the LTWP in referring to the same strategies and rules as are contained in the Queensland WRP and ROP.
		This index	Explanatory Note 6C of Part 6 Chapter 5 Index	**Explanatory Note 6C** Each year as part of setting the annual environmental watering priorities, consultation is undertaken with NSW, Commonwealth Environmental Water Office (CEWO) and SunWater. This consultation identifies opportunities for the coordination of environmental watering. This provides for the coordination of environmental watering between the plan area and the Intersecting Streams WRP area. During the year, the Department of Natural resources and Mines advises the CEWO (as an entitlement holder in the Warrego) of announced flow conditions for waterharvesting to commence in the Warrego. This informs the CEWO of their share of the flow event.
10.28	WRP must ensure that there is no net reduction in the protection of planned environmental water	Queensland WRP	Section 11: Ecological outcomes Chapter 5: Strategies for achieving outcomes	The Queensland WRP includes outcomes for protecting and, where possible, enhancing the ecological integrity of a water resource plan area. These ecological outcomes are balanced with the need to provide for social and economic outcomes in the plan area. The outcomes are achieved through Queensland WRP strategies, environmental flow

BP Section	BP requirement	Instrument addressing requirement	Part of instrument or text constituting Water Resource Plan that addresses requirement	Explanatory Notes
			Section 15: Environmental flow objectives and performance indicators	objectives, water allocation security objectives (relevant to the water held by the CEWH) and the effect of water sharing rules, infrastructure operating rules and flow event management rules in the ROP. The Queensland WRP sets out the strategies for achieving the outcomes. An example of a strategy in the Queensland WRP (section 19) is the requirement that a decision cannot increase the average annual volume of water that is able to be taken under the plan. In other words, no further take of water is allowed under the plan. Performance indicators (PIs) are statistical measures that can be calculated using the long term model simulation to assess the impact of the allocation and management decision or proposal on water entitlements and natural ecosystems. The environmental flow objectives (EFOs) are the allowable limit under the Queensland WRP for the PIs. The PIs are used to test rules or water allocation changes to ensure that impacts on flows are within defined limits compared with the natural (pre-development) model simulation. A decision that would lead to the EFO being exceeded is not permitted under the Queensland WRP. The review of the Queensland WRP and ROP incorporated new scientific information resulting from monitoring activities in Queensland. This review resulted in a suite of new PIs and EFOs being chosen and assessed. These PIs and EFOs provide transparency about the mechanisms by which the new plan protects flow components, including cease to flow, base flows (including the low flows across the border into NSW), in channel fresh events, bankfull flows, over-bank flows and end-of-system mean annual flows). Refer to Appendix B in this index for further detail.

BP Section	BP requirement	Instrument addressing requirement	Part of instrument or text constituting Water Resource Plan that addresses requirement	Explanatory Notes
		This Index	Explanatory Note 6D of Part 6 of Chapter 5 Index	**Explanatory Note 6D** The responsible person for undertaking the application of Chapter 5 of the Queensland WRP is the chief executive (in accordance with Section 10.06 (2) of the Basin Plan).
		ROP	Chapter: 2: Cunnamulla Water Supply Scheme Chapter 3: Rules for unsupplemented water allocations Chapter4: Water licences	The ROP rules must be consistent with the outcomes and strategies in the water resource plan, and include specific rules for water sharing and dealings (including trades) associated with water allocations and other entitlements to take water. The rules ensure that water extractions are managed to protect the riverine environment while giving security to water entitlement holders. Water allocation security objectives protect water allocations including the CEWO water allocations from adverse water management/planning decisions. The rules and flow triggers protecting the availability of the planned environmental water are responsive to the natural variability of flows, as well as water use decisions by individual entitlement holders, which are made in accordance with entitlement access conditions and within the rules-based management framework. Any amendment of conditions on entitlements and licences must be tested against the EFOs, water allocation security objectives and the strategies of the WRP, and must also meet the rules in the ROP. In general terms a change must have insignificant impacts on third parties and on environmental flows to be approved. In addition, the new ROP (s 18) has improved transparency by incorporating the measures for critical water sharing arrangements into the rules. These types of arrangements have previously been approved outside the statutory water planning framework.

BP Section	BP requirement	Instrument addressing requirement	Part of instrument or text constituting Water Resource Plan that addresses requirement	Explanatory Notes
				The ROP also includes rules that provide an enhanced level of protection to environmental flows through a rule requiring entitlements that do not currently require a passing flow at the point of take ('nil flow' licences) to be amended to state a requirement that there must be a visible passing flow downstream of the point of take before take is authorised. This enhanced requirement will apply as a consequence of an applicant-driven change to the location of a water entitlement. Refer to Appendix B in this index for further detail.
		This Index	Explanatory Note 6E of Part 6 of Chapter 5 Index	**Explanatory Note 6E** The responsible person for undertaking the measure in Chapter 2 of the Queensland ROP is the resource operations licence holder (in accordance with Section 10.06 (2) of the Basin Plan). The responsible person for undertaking the measure in Chapter 2 Part 1 (32) of the Queensland ROP is the water allocation holder or any assignee (in accordance with Section 10.06 (2) of the Basin Plan).
		Water Act 2000[45]	Section 808 Unauthorised taking, supplying or interfering with water Section 812 Contravening conditions of water entitlement, seasonal water assignment notice or water permit	These Water Act 2000 provisions are relevant rules and arrangements for planned environmental water (PEW), as identified in Part 3 of this index (provisions addressing s10.09 of the Basin Plan).

[45] *Water Act 2000 (Qld),* current as at 2 October 2015

5.7 Part 7—Water quality objectives

Note: Any sections of the instruments or texts not explicitly identified in this table do not form part of this Water Resource Plan.

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text constituting Water Resource Plan that addresses the requirement	Explanatory Notes
Part 7—Water quality objectives				
10.29 Water resource plan to include a WQM Plan.	A water resource plan must include a WQM Plan. The WQM Plan must be made in accordance with this Part.	This index[46]	Explanatory note 7A of Part 7 of Chapter 5 Index	**Explanatory note 7A** The WQM Plan is not a single document, but rather a compilation of all relevant sections of Queensland plans, strategies and policies that address water quality. The sections of the relevant instruments referred to by Part 7 of this index for provisions 10.30 to 10.35 of the Basin Plan address the requirement to have a WQM Plan under s.10.29. The WQM Plan therefore encapsulates the overall framework for the management of water quality in Queensland Murray-Darling Basin catchments. The WQM Plan was made in accordance with Part 7 of the Basin Plan. The HWMP for the Warrego, Paroo, Bulloo and Nebine Basins is the primary instrument referred to by the WQM Plan. HWMPs are developed under the Queensland Environmental Protection (Water) Policy 2009 (EPP Water), which is subordinate legislation to the Environmental Protection Act 1994 (Qld).
10.30 WQM Plan to identify key causes of water	The WQM Plan must identify the causes, or likely causes, of water quality degradation in the water resource plan area having regard to the key causes of water quality degradation identified in Part 2 of	HWMP[47]	Section 7—Key causes of water quality degradation.	Section 7 of the HWMP identifies the key causes, or likely causes, of water quality degradation in the plan area – which are the only causes, or likely causes, of water quality degradation for the purposes of 10.30 of the Basin Plan. These causes were identified and assessed through consultation with the Water Quality Technical Panel. The Water Quality Technical Panel is consulted on matters where skilled expertise of the Warrego, Paroo, Bulloo and Nebine region or technical input is

[46] DNRM (2016j) Warrego-Paroo-Nebine Water Resource Plan, November 2016

[47] DEHP (2016a), *Healthy Waters Management Plan: Warrego, Paroo, Bulloo and Nebine basins*, State of Queensland, February 2016

quality degradation.	Chapter 9 and set out in Schedule 10.			required. The panel is comprised of technical staff from Queensland Government departments, South West NRM Ltd and external water quality experts and utilises a range of best available information. The identification of key causes,(i.e. causes or likely causes), of water quality degradation in Section 7 of the HWMP was based on the key causes of water quality degradation identified in Part 2 of Chapter 9, and set out in Schedule 10 of the Basin Plan. The column labelled 'Applicable drainage basins' in Section 7, Table 13 identifies where there is the potential for the key causes of water quality degradation to occur. If the key cause of water quality degradation is applicable to an area, the reader is directed to the risk assessment in section 8 and appendix 5 of the HWMP, to see the **likelihood** and **consequence** of the key cause of water quality degradation impacting on water resources.
10.31 Measures addressing risks arising from water quality degradation.	If a risk of a kind mentioned in paragraph 10.41(2)(d) has been identified in relation to the water resources of the water resource plan area, the WQM Plan must explain why measures addressing the risk have or have not been included in the water resource plan.	This index	Explanatory note 7B of Part 7 of Chapter 5 Index	**Explanatory note 7B** Section 8 and Appendix 5 of the HWMP identifies the risk associated with elevated levels of salinity or other types of water quality degradation (as per section 10.41(2)(d) of the Basin Plan). The majority of risks were assessed as 'low' for the plan area. Measures have not been included in the WQM Plan for low risks as these measures could not be undertaken cost-effectively and would not be fit-for-purpose for the plan area. Medium, high or very high water quality risks that were identified in the plan area were: • Risk 1: elevated levels of suspended matter and deposited sediment: very high risk in the Paroo basin and high risk in the Warrego and Nebine basins • Risk 2: dissolved oxygen outside natural (ambient) ranges: medium risk in the Paroo basin • Risk 3: elevated levels of salinity: medium risk in the St George Alluvium (Deep). Measures addressing medium, high or very high risks were included in the WQM Plan if the following criteria were met: the relevant water quality and salinity target values that relate to the risk are identified in section 11 of the HWMP; • the measure is an action within the scope of the management of water resources under the Water Act 2007 (Cth) and Water Act 2000(Qld);

				• the measures are fit-for-purpose and cost effective (i.e. consideration has been given to the costs of addressing a particular risk and, given the low level of water resource development and low population within the plan area, whether the costs exceed any expected benefits). Measures to address Risk 1 and Risk 2 were not included in the WQM Plan, as the source of the risks related to land management. The WQM Plan recognises relevant land management responses included in Section 9 of the HWMP, however these management responses are not nominated as measures for the purpose of 10.31 of the Basin Plan, as the management responses are not within the scope of the management of water resources under the Water Act 2007 (Cth.) and Water Act 2000 (Qld.). A measure to address Risk 3 was included in the WQM Plan as the measure was consistent with the criteria listed above, fit-for-purpose, cost effective and not in conflict with other policies or targets.
10.32 WQM plan to identify water quality target values	(1) The WQM Plan must identify the water quality target values for the water resource plan area	HWMP	CURRAWINYA LAKES RAMSAR SITE SURFACE WATERS Table 29A—Water quality target values NEBINE DRAINAGE BASIN SURFACE WATERS Table 24A—Water quality target values for event (high) flows and baseflows WARREGO DRAINAGE BASIN SURFACE WATERS Table 25A—Water quality target values for event (high) flows and baseflows PAROO DRAINAGE BASIN SURFACE WATERS Table 26A—Water quality target	The HWMP identifies the relevant water quality target values for fresh water-dependent ecosystems. <u>Declared Ramsar Wetlands</u>: • Currawinya Lakes Ramsar site – Streams and rivers: Table 29A • Currawinya Lakes Ramsar site – Lakes and wetlands: Table 29A Note for water quality target values for fresh water-dependent ecosystems – Declared Ramsar Wetlands: While not accredited under the Basin Plan, the water quality target values in Table 29B and water quality targets for permanent waterholes (Section 11.2.5.1), which were developed under Queensland legislation, are recognised to support the accredited water quality target values to protect and restore water-dependent ecosystems (Declared Ramsar Wetlands). <u>Other water-dependent ecosystems</u>: • Nebine drainage basin: Table 24A • Warrego drainage basin: Table 25A • Paroo drainage basin: Table 26A.

			values for event (high) flows and baseflows WATER QUALITY TARGET VALUES FOR RECREATION Table 70: Suitability for primary, secondary and visual recreation — provision (1) cyanobacteria and algae targets.	Note for water quality target values for fresh water-dependent ecosystems – Other water-dependent ecosystems: While not accredited under the Basin Plan, the water quality target values in Tables 24B, 25B and 26B, which were developed under Queensland legislation, are recognised to support the accredited water quality target values to protect and restore water-dependent ecosystems. <u>For irrigation water</u>: No applicable values identified for the plan area. <u>For water used for recreational purposes:</u> Table 70 recreation — provision (1) cyanobacteria and algae targets Note for water quality target values for water used for recreational purposes: While not accredited under the Basin Plan, the values in Table 70 provision (2) for primary, secondary and visual recreation are recognised to support the accredited water quality target values for recreational purposes.
	(2) The water quality target values are the following: (a) For fresh water dependent ecosystems—the applicable target values referred to in section 9.16;	HWMP	CURRAWINYA LAKES RAMSAR SITE SURFACE WATERS Table 29A—Water quality target values NEBINE DRAINAGE BASIN SURFACE WATERS Table 24A—Water quality target values for event (high) flows and baseflows WARREGO DRAINAGE BASIN SURFACE WATERS Table 25A—Water quality target values for event (high) flows and baseflows PAROO DRAINAGE BASIN SURFACE WATERS Table	<u>Declared Ramsar wetlands:</u> **Currawinya Lakes Ramsar site - Streams and rivers*:*** The water quality target values in section 9.16 (and subsequently Schedule 11) of the Basin Plan were adopted for Dissolved Oxygen, pH, Salinity, Temperature, and Pesticides, Heavy Metals and Other Toxic Contaminants in Table 29A of the HWMP. **Currawinya Lakes Ramsar site - Lakes and wetlands*:*** The water quality target values in section 9.16 (and subsequently Schedule 11) of the Basin Plan were adopted for Dissolved Oxygen, Salinity, Temperature, and Pesticides, Heavy Metals and Other Toxic Contaminants in Table 29A of the HWMP. <u>Other water-dependent ecosystems:</u> The water quality target values in section 9.16 (and subsequently Schedule 11) of the Basin Plan were adopted for issolved Oxygen, Salinity and Temperature in Tables 24A, 25A and 26A of the HWMP for the Nebine drainage basin, Warrego drainage basin and Paroo drainage basin, respectively.

		26A—Water quality target values for event (high) flows and baseflows	
(b) For irrigation water—the target values for water quality characteristics set out in section 9.17;	This index	Explanatory note 7C of Part 7 of Chapter 5 Index	**Explanatory note 7C** The water quality targets for irrigation water specified in Section 9.17 of the Basin Plan are not applicable within the Warrego, Paroo and Nebine plan area as there are no sites where water is extracted by an irrigator infrastructure operator for the purposes of supplying water to irrigators. Water entitlement holders in the Cunnamulla Water Supply Scheme pump directly from the watercourse. As a result, no sites were identified for the plan area under Section 10.34 of the Basin Plan, therefore the target values for irrigation water set out in section 9.17 do not apply. While not accredited under the Basin Plan, Table 56 provision (1) in the HWMP for the Warrego, Paroo, Bulloo and Nebine drainage basins is recognised to provide targets for irrigation water in the plan area for the purposes of Queensland water quality planning and management.
(c) For water used for recreational purposes—the values set out in section 9.18.	HWMP	WATER QUALITY TARGET VALUES FOR RECREATION Table 70: Suitability for primary, secondary and visual recreation — provision (1) cyanobacteria and algae targets	The water quality target values referred to in section 9.18 of the Basin Plan were adopted in Table 70, provision (1) i.e. cyanobacteria and algae targets for primary, secondary and visual recreation in the HWMP.
(3) However, if the objectively determined actual value of a water quality characteristic at a site is better than the target value identified in subsection (2), then the target value is that better value.	This index	Appendix C1 and C2 Index	Appendix C1 identifies water quality target values that are better than the water quality target values set out in section 9.16 and Schedule 11 of the Basin Plan. Appendix C2 explains how and why the better values were objectively determined. Note that the values highlighted blue in Appendix C1 – Tables 1 and 2 are included in Tables 24A, 25A, 26A and 29A of the HWMP.

	(4) The WQM Plan may specify an alternative water quality target value if: (a) it is consistent with the water quality objectives in Part 3 of Chapter 9; and (b) it is determined in accordance with the procedures set out in the ANZECC Guidelines; and (c) either: (i) the alternative target value provides a better level of protection than the value that would apply under subsection (2) or (3), as applicable; or (ii) the WQM Plan sets out reasons why the alternative target value will be as effective in achieving the objectives in Part 3 of Chapter 9; or (iii) the WQM Plan sets out reasons why the target value in subsection (2) or (3), as applicable, is inappropriate for the water resource plan area; and (d) for a water resource that is also covered by a water resource plan area of another Basin State – it is developed in consultation with that State.	This index	Appendix C1 and C3 Index	Appendix C3 contains an explanation as to how the requirements in section 10.32(4) of the Basin Plan were met, with reference to information in Appendix C1.
10.33 WQM Plan to identify measures	(1) The WQM Plan must specify measures to be undertaken in or in relation to the water resources of the water resource plan area that contribute to the achievement of the objectives set out in:	This index	Appendix D1 Measures that contribute to the achievement of objectives	Three measures are submitted for accreditation under section 10.33 of the Basin Plan – as specified in Appendix D1. Queensland will continue to report on the implementation of these measures in accordance with section 13.14 (Reporting Matter 12) of the Basin Plan. Note: While not accredited under the Basin Plan, the WQM Plan recognises the management responses listed in Section 9 of the HWMP for the Warrego, Paroo, Bulloo and Nebine basins to encapsulate the overall framework for the management of water quality in the

	(a) section 9.04 (Objectives of water-dependent ecosystems); and (b) section 9.05 (Objectives for raw water for treatment for human consumption); and (c) section 9.06 (objectives for irrigation water); and (d) section 9.07 (Objectives for recreational water quality); and (e) section 9.08 (Objectives to maintain good levels of water quality); unless there are no such measures that can be undertaken cost-effectively. (2) The measures must be prepared having regard to: (a) the causes, or likely causes, of water quality degradation identified in accordance with section 10.30; and (b) target values identified in accordance with section 10.32; and (c) the targets in Division 4 of Part 4 of Chapter 9.			Queensland Murray-Darling Basin. In addition to the measures recommended for accreditation under the WQM Plan and the management responses recognised in the HWMP, there are other factors that contribute to minimising water quality impacts in the plan area. Refer to Appendix D2 for supporting information.

	(3) The measures may include land management measures.			
10.34 WQM Plan to identify locations of targets for irrigation water	The WQM Plan must identify the sites in the water resource plan area at which the target values for irrigation water apply.	This Index	Explanatory note 7D of Part 7 of Chapter 5 Index	**Explanatory note 7D** There are no sites in the water resource plan area at which the target values for irrigation water apply. Water entitlement holders in the Cunnamulla Water Supply Scheme pump directly from the watercourse, rather than SunWater extracting the water to supply to irrigators. As a result, section 10.34 does not apply to the plan area.
10.35 Impact of WQM Plan on another Basin State	The measures specified in the WQM Plan must be developed having regard to: (a) the impact those measures (including the absence of adequate measures) may have on the ability of another Basin State to meet water quality targets; and (b) any adverse impacts those measures may have on Basin water resources in the other Basin State.	HWMP	Section 13—Impact on New South Wales water resources Section 4.7—Consultation with the New South Wales Government	The HWMP contains details of the correspondence and consultation with the New South Wales government. The key improvements made to the HWMP were: • Proposed alternative water quality target values were reviewed and updated based on the availability of additional local data. • Text boxes were included throughout the document to assist the reader to understand how the HWMP contributes to meeting the requirements of a Water Quality Management Plan under the Basin Plan. The updated HWMP distinguished between sections of the document that were recommended for accreditation under the Basin Plan, and sections that were recognised to support them. This approach was taken to ensure that the WQM Plan encapsulated the overall framework for the management of water quality in Queensland Murray-Darling Basin catchments.

5.8 Part 8—Trade of water access rights

Note: Any sections of the instruments or texts not explicitly identified in this table do not form part of this Water Resource Plan.

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text constituting Water Resource Plan that addresses requirement	Explanatory Notes
10.36 Application of Part	This part does not apply to water access rights of a kind that are not able to be traded under State water management law	Not applicable	Not applicable	The Queensland WRP does not permit trading of groundwater entitlements in the plan area.
10.37 Circumstances in which conditions in section 12.24 are met	(1) A water resource plan must set out the circumstances in which trade between 2 locations within a groundwater SDL resource unit is permitted. In setting out the circumstances, a water resource plan must ensure that each condition set out in section 12.24 will be met in relation to the proposed trade. (2) If the water resource plan applies a conversion rate to meet the condition in paragraph 12.24(d), the water resource plan must either: (a) specify the conversion rate; or (b) set out the way in which the conversion rate will be determined	This index[48]	Explanatory note 8A of Part 8 of Chapter 5 Index	**Explanatory note 8A** Trade between 2 locations within a groundwater SDL resource unit is not permitted under the Queensland WRP. Section 29 of the Queensland WRP only permits the take of groundwater under non-tradable authorisations. Therefore this section is not applicable.

[48] DNRM (2016j) Warrego-Paroo-Nebine Water Resource Plan, November 2016

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text constituting Water Resource Plan that addresses requirement	Explanatory Notes
	from time to time and made generally available.			
10.38 Circumstances in which conditions in section 12.25 are met	(1) A water resource plan must set out the circumstances in which trade between 2 groundwater SDL resource units is permitted. In setting out the circumstances, a water resource plan must ensure that each condition set out in section 12.25 will be met in relation to proposed trade. (2) If the water resource plan applies a conversion rate to meet the condition in paragraph 12.25(e), the water resource plan must either: (a) specify the conversion rate; or (b) set out the way in which the conversion rate will be determined from time to time and made generally available.	This index	Explanatory note 8B of Part 8 of Chapter 5 Index	**Explanatory note 8B** Trade between 2 groundwater SDL resource units is not permitted in the Queensland WRP. As trade is currently not permitted this section is not applicable.
10.39 Circumstances in which conditions in section 12.26 are met	(1) A water resource plan must set out the circumstances in which trade between a groundwater SDL resource unit and a surface water SDL resource unit is permitted. In setting out the circumstances, a water resource plan must ensure that each condition set out in	This index	Explanatory note 8C of Part 8 of Chapter 5 Index	**Explanatory note 8C** Trade between a groundwater SDL resource unit and a surface water SDL resource unit is not permitted in the Queensland WRP. As trade is currently not permitted this section is not applicable.

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text constituting Water Resource Plan that addresses requirement	Explanatory Notes
	section 12.26 will be met in relation to the proposed trade. (2) If the water resource plan applies a conversion rate to meet the condition in paragraph 12.26(e), the water resource plan must either: (a) specify the conversion rate; or (b) set out the way in which the conversion rate will be determined from time to time and made generally available.			

5.9 Part 9—Approaches to addressing risks to water resources

Note: Any sections of the instruments or texts not explicitly identified in this table do not form part of this Water Resource Plan.

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text comprising Water Resource Plan that meets requirement	Explanatory Notes
Part 9—Approaches to addressing risks to water resources				
10.41 Risk identification and assessment methodology	1) A water resource plan must be prepared having regard to current and future risks to the condition and continued availability of the water resources of the water resource plan area. 2) Without limiting subsection (1), the risks include (where applicable): (a) risks to the capacity to meet environmental watering requirements; and (b) risks arising from the matters referred to in subsection 10.20(1); and (c) risks arising from potential interception activities; and (d) risks arising from elevated levels of salinity or other types of water quality degradation.	Risk assessment and threat prioritisation: Bulloo, Paroo, Warrego and Nebine catchments[49]	Methods chapter Results chapter	A qualitative risk assessment conducted as part of this study identified priority threats to aquatic ecosystems in the Warrego, Paroo and Nebine catchments, based on a survey of individuals with expertise in these catchments. The three highest ranked threats to all catchments were identified as introduced aquatic fauna, deposited sediment, and introduced riparian fauna. Climate change, hydrologic connectivity and inter-basin transfer were rated as low risk.
		Risk assessment of insufficient water for the environment[50]	Chapter 3: Scope of risk assessment Chapter 4: Risk assessment process Chapter 5: Results Appendices 1-4: Risk registers	This risk assessment addresses the risk identified in section 4.02 of the Basin Plan — the risk of insufficient water available for the environment. Chapter 3 of the risk assessment sets out the eight current and future risks considered in the assessment. The risks include factors such as altered flow regimes, extraction of water from waterholes, and increased number of spells without flow. The methodology of the risk assessment is described in Chapter 4, and is consistent with AS/NZS ISO 31000:2009. The specific information

[49] Department of Science, Information Technology, Innovation and the Arts (DSITIA) (2012), *Risk assessment and threat prioritisation: Bulloo, Paroo, Warrego and Nebine catchments*: *Stream and Estuary Assessment Program*, State of Queensland, June 2012

[50] Department of Natural Resources and Mines (DNRM) (2016h), *Warrego, Paroo, Bulloo and Nebine Water Resource Plan Review: Risk assessment of insufficient water available for the environment*, State of Queensland, February 2016

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text comprising Water Resource Plan that meets requirement	Explanatory Notes
	3) In identifying risks for the purposes of subsection (1), regard must be had to: (a) risks identified in section 4.02; and (b) any guidelines published by the Authority in relation to risk identification and assessment. 4) The water resource plan must list the risks identified for the purposes of subsection (1). 5) The water resource plan must assess each risk. 6) The water resource plan must define the level of risk of each risk, using the following categories: (a) low; (b) medium; (c) high, (d) if it is considered appropriate, any additional category.			used to assess each risk in each catchment of the plan area is described in Appendices 1-4, as well as the uncertainties surrounding the level of risk.
		Risk assessment of insufficient water for surface water and groundwater users[51]	Chapter 3: Scope of risk assessment Chapter 4: Risk assessment process Chapter 5: Results Appendices 1-8: Risk registers	This risk assessment addresses the risk identified in section 4.02 of the Basin Plan, the risk of insufficient water for surface water and groundwater users. Chapter 3 of the risk assessment sets out the 12 current and future risks considered in the assessment. The risks include factors such as climate change, growth in surface water diversions, and increase in interception of groundwater by CSG and mining activities. The methodology of the risk assessment is described in Chapter 4, and is consistent with AS/NZS ISO 31000:2009. The specific information used to assess each risk in each catchment of the plan area is described in Appendices 1-8, as well as the uncertainties surrounding the level of risk. Risks arising from the matters referred to in subsection 10.20(1) of the Basin Plan (structural damage to aquifers and hydraulic relationships of groundwater) were considered to be very unlikely to occur due to the very low level of take from aquifers in the plan area and minimal expected future growth in take. These risks were not considered further and no treatments were identified to address these risks.
		This index[52]	Explanatory Note 9A of Part 9 of Chapter 5 Index	**Explanatory Note 9A**

[51] DNRM (2016g), *Warrego, Paroo, Bulloo and Nebine Water Resource Plan review*: *Risk assessment of insufficient water available for surface water and groundwater users*, State of Queensland, February 2016

[52] DNRM (2016j) Warrego-Paroo-Nebine Water Resource Plan, November 2016

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text comprising Water Resource Plan that meets requirement	Explanatory Notes
	7) The water resource plan must describe the data and methods used to identify and assess the risks. 8) The water resource plan must describe any quantified uncertainties in the level of risk attributed to each risk, including the results of any sensitivity analysis.			No risks were identified arising from the matters referred to in subsection 10.20(1) of the Basin Plan, i.e. structural damage to an aquifer and hydraulic relationships of groundwater. Due to the very low level of take from aquifers in the plan area and minimal expected future growth in take, potential risks such as insufficient water available for consumptive use or water being of a quality unsuitable for use are considered very unlikely to occur.
		HWMP[53]	Section 8: Risk assessment of water being of a quality unsuitable for use Appendix 5: Warrego, Paroo, Bulloo and Nebine Water Quality Risk Assessment Methodology	The risk assessment conducted for the Healthy Waters Management Plan addresses the risk identified in section 4.02 of the Basin Plan, the risk of water being of a quality unsuitable for use. The risk factors that were assessed were informed by the key causes of water quality degradation listed in Schedule 10 of the Basin Plan. Additional risk factors, such as pest flora and fauna, were also assessed in the HWMP for State planning purposes. The methodology of the risk assessment is described in Appendix 5, and is consistent with AS/NZS ISO 31000:2009. The specific information used to assess each risk in each catchment of the plan area is described in Appendix 5 Attachment 1, as well as the uncertainties surrounding the level of risk.
		Environmental Assessment Report Stage 2[54]	Chapter 1: Introduction Chapter 4: Methods for assessing the effectiveness of the water resource plan	The environmental risk assessment was conducted to inform the state WRP. It specifically examines the risk to plan ecological outcomes as a result of water resource development.

[53] Department of Environment and Heritage Protection (DEHP) (2016a), *Healthy Waters Management Plan: Warrego, Paroo, Bulloo and Nebine Basins*, State of Queensland, February 2016

[54] DSITIA (2013a), *Review of Water Resource (Warrego, Paroo, Bulloo and Nebine) Plan 2003 and Resource Operations Plan: Environmental Assessment Report – Stage 2*, State of Queensland, October 2013

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text comprising Water Resource Plan that meets requirement	Explanatory Notes
			Chapter 5: Results	Chapter 4 describes the assessment process, which uses an eco-hydraulic modelling approach based on the principles of ecological risk assessment to assess the risk to aquatic ecosystem components, processes and services from the plan area. The assets modelled are used as indicators to model the risk to plan outcomes. Chapter 5 of the assessment presents the results of the modelling. All ecological assets modelled were found to be at low risk from water resource development.
10.42 Description of risks	A water resource plan must describe: (a) each risk which is defined in accordance with subsection 10.41(6) as having a medium or higher level of risk; and (b) factors that contribute to those risks.	Risk assessment of insufficient water available for surface and groundwater users	Chapter 5: Results	This risk assessment examined the risk that there would be insufficient water available for consumptive, social, cultural, Indigenous and other uses. Chapter 5 identifies a high level of risk for growth in take of groundwater for irrigation and non-mining purposes in the St George Alluvium (deep). This is due to high demand for groundwater from the Condamine-Balonne section of the deep aquifer, which is currently fully allocated to SDL. The risk assessment assumed that key management strategies in the Queensland WRP 2003 would be continued in the replacement plan. These strategies include not permitting any additional take of water, regulation of overland flow harvesting, and conditions on water allocations controlling how much water could be harvested at different flow levels. These strategies have resulted in a number of risks being rated as low in this risk assessment. These strategies have all been included in the new Queensland WRP.
		Risk assessment of insufficient water	Chapter 5: Results	Chapter 5 of this risk assessment identifies a moderate level of risk for lowering of groundwater levels in the St George Alluvium. This is due to

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text comprising Water Resource Plan that meets requirement	Explanatory Notes
		available for the environment		a possible increase in groundwater take from the aquifer, within the SDL, and may impact on groundwater dependent terrestrial vegetation. Confidence in this assessment is limited due to a lack of on-ground information to verify the presence of groundwater dependent ecosystems. Risks rated as low in this assessment were influenced by existing management strategies, the primary strategy being the restriction on additional take and this has been continued in the new Queensland WRP. An extension of this strategy is maintaining the conditions on water allocations controlling how much water could be harvested at different flow levels. .
		HWMP	Section 8.3: Risk assessment results (Risks 1, 2 and 3) Appendix 5, Attachment 1 — Water Quality Risk Assessment Workshop Comments and Analysis	The key water quality risks in the plan area based on the key causes of water quality degradation in Schedule 10 of the Basin Plan were: 1. Elevated levels of suspended matter and deposited sediment as very high risk for the Paroo surface waters and high risk for the Warrego and Nebine surface waters 2. Dissolved oxygen outside natural (ambient) ranges as medium risk for the Paroo surface waters 3. Elevated levels of salinity a medium risk in the St George Alluvium (Deep) The factors that contribute to these risks are detailed in Appendix 5, Attachment 1 of the HWMP. Only the risk of elevated levels of salinity in the St George Alluvium (Deep) was due to the management of water levels. The remaining risks were due to land use management. Note: Section 8.3, Risks 4-7 were assessed for State planning purposes. While not accredited under the Basin Plan, these risks are

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text comprising Water Resource Plan that meets requirement	Explanatory Notes
				recognised in this index in order to encapsulate the overall framework for the management of water quality in Queensland Murray-Darling Basin catchments
10.43 Strategies for addressing risks	1) If a water resource plan defines a risk in accordance with subsection 10.41(6) as having a medium or higher level of risk, the water resource plan must either: (a) describe a strategy for the management of the water resources of the water resource plan area to address the risk in a manner commensurate with the level of risk; or (b) explain why the risk cannot be addressed by the water resource plan in a manner commensurate with the level of risk. 2) If the water resource plan identifies a risk which relates to a matter dealt with by a requirement in another Part of this Chapter, the strategy must take account of that requirement.	Queensland WRP[55]	Section 19: Decision to not increase amount of water taken Section 29(2): Limitation on taking or interfering with groundwater—Act, s 20(2)(c) Schedule 5: Reserves for granting unallocated water	Section 19 in the Queensland WRP is the primary strategy to address the risks identified in s10.42 above. This strategy does not permit any additional take of water from the plan area, beyond that identified in Schedule 5 as unallocated water. This strategy has been carried over from the previous Queensland WRP. Furthermore, extensions of the primary strategy are: • regulation of overland flow • maintaining conditions on water allocations • section 29(2) of the Queensland WRP which prevents the take or interference with groundwater from the St George Alluvium (deep). To mitigate the risk of growth in take from the St George Alluvium (deep), no unallocated water will be released from the St George Alluvium (deep) aquifer unit. Risks rated as low in this assessment were influenced by existing management strategies, the primary strategies being such as the restriction on additional take, and maintain the conditions on water allocations controlling how much water could be harvested at different flow levels. These management strategies have been continued in the new Queensland WRP.

[55] Water Resource (Warrego, Paroo, Bulloo and Nebine) Plan 2016 (Qld)

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text comprising Water Resource Plan that meets requirement	Explanatory Notes
	3) A water resource plan must be prepared having regard to: (a) the strategies listed in subsection 4.03(3); and (b) any guidelines published by the Authority in accordance with section 4.04.	This Index	Explanatory Note 9B of Part 9 of Chapter 5 Index	**Explanatory Note 9B** The responsible person for undertaking the measure in Section 19 of the Queensland WRP is the chief executive (in accordance with Section 10.06 (2) of the Basin Plan).
		This index	Appendix D1 Measures that contribute to the achievement of objectives	Section 4.03 of the Basin Plan identifies the Water Quality and Salinity Management Plan as a strategy to manage, or address, identified risks. The Queensland Government has identified measures to address water quality risks (assessed as medium or higher) in Appendix D1 of this index. See also section 10.33. The majority of risks were assessed as 'low' for the plan area. Measures have not been included in the WQM Plan for low risks as these measures could not be undertaken cost-effectively and would not be fit-for-purpose for the plan area. Medium, high or very high The key risks to water quality risks that were identified for Queensland Murray-Darling Basin catchments in the plan area were: • Risk 1: elevated levels of suspended matter and deposited sediment: as very high risk in the Paroo basin and high risk in the Warrego and Nebine basins • Risk 2: dissolved oxygen outside natural (ambient) ranges: as medium risk in the Paroo basin • Risk 3: elevated levels of salinity: a medium risk in the St George Alluvium (Deep). Measures addressing medium, high or very high risks were included in the WQM Plan if the following criteria were met: • the level of risk is medium, high or very high;

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text comprising Water Resource Plan that meets requirement	Explanatory Notes
				• the relevant water quality and salinity target values that relate to the risk are identified in section 11 of the HWMP; • the measure is an action within the scope of the management of water resources under the Water Act 2007 (Cth) and Queensland Water Act 2000 (Qld); • the measures are fit-for-purpose and cost effective (i.e. consideration has been given to the costs of addressing a particular risk and, given the low level of water resource development and low population within the plan area, whether the costs exceed any expected benefits). Measures to address Risk 1 and Risk 2 were not included in the WQM Plan, as the source of the risks related to land management. The WQM Plan recognises relevant land management responses included in Section 9 of the HWMP, however these management responses are not nominated as measures for the purpose of 10.31 of the Basin Plan, as the management responses are not within the scope of the management of water resources under the Water Act 2007 (Cth.) and Water Act 2000 (Qld.). A measure to address Risk 3 was included in the WQM Plan as the measure was consistent with the criteria listed above, fit-for-purpose, cost effective and not in conflict with other policies or targets.
		This index	Explanatory note 9C of Part 9 of Chapter 5 Index	**Explanatory note 9C** The water resource plan was prepared having regard to the strategies listed in subsection 4.03(3) in the Basin Plan. For example, the HWMP examined the default water quality and salinity targets for the Basin Plan and developed more appropriate targets for the Water Resource Plan area using local data (see HWMP Ch. 11). Best available information was used to develop this Water Resource Plan, as

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text comprising Water Resource Plan that meets requirement	Explanatory Notes
				described in Part 12 of this Index. Part 2 of this Index describes the consultation used to inform development of the Water Resource Plan. All strategies in this Water Resource Plan are consistent with the strategies listed in subsection 4.03(3). At the time of writing (January 2016), the Authority has published a Handbook for Practitioners and a number of position statements. These were referred to in the preparation of this Index.

5.10 Part 10—Measuring and monitoring

Note: Any sections of the instruments or texts not explicitly identified in this table do not form part of this Water Resource Plan.

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text constituting Water Resource Plan that addresses the requirement	Explanatory Notes
Part 10 – Measuring and monitoring				
10.44 Information relating to measuring take—water access entitlements	A water resource plan must include the following information in relation to each class of water access right relating to the water resources of the water resource plan area: (a) the best estimate of the total long-term annual average quantity of water taken that is measured; (b) the best estimate of the total long-term annual average quantity of water taken that is not measured; (c) how the quantities under paragraphs (a) and (b) were calculated; (d) the proportion of the quantity referred to in paragraph (a) that is measured in accordance with standards for measuring agreed by the Basin States and the Commonwealth.	Water Accounting Methods Report[56]	Chapter 4 Information relating to measuring take Chapter 6.2: Annual actual take by floodplain harvesting Appendix B: Method for estimating take from watercourses under basic rights	Chapter 4.1 details the long term average annual take for each SDL resource unit and breaks down each form and class of take into the proportions that are measured and not measured. These volumes are calculated by using a number of means including records of which entitlements are metered, modelled diversions and estimates based on flow opportunities and work capacities (see Chapter 4.2 for details). The method for estimating annual actual take by floodplain harvesting is described in Chapter 6.2. Long-term annual average take under basic rights from a watercourse is estimated using the methodology described in Appendix B. As the time of submission of this WRP,, no agreed standards for measuring [section 10.44(d)] had been developed. Details of the proportion of take measured in accordance with standards for measuring agreed by the Basin States and the Commonwealth is not provided.

[56] DNRM (2016f), *Water Accounting Methods Report for Warrego-Paroo-Nebine Water Resource Plan*, State of Queensland, November 2016

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text constituting Water Resource Plan that addresses the requirement	Explanatory Notes
		Parsons Brinckerhoff 2011[57]	Methodology for estimating the take of groundwater for stock and domestic purposes in the Queensland Murray Darling Basin	The long term annual average take for basic rights from groundwater is estimated using the methodology outlined in Parson Brinckerhoff 2011 report.
10.45 Supporting measuring	(1) A water resource plan must specify measures for maintaining and, if practicable, improving: (a) the proportion of take that is measured in the water resource plan area; and (b) the standard to which take is measured.	Water Act 2000[58]	Section 808: Unauthorised taking, supplying or interfering with water (3)	The *Water Act 2000* (Qld) makes it an offence to take water under authority of a metered entitlement without an approved meter.
		This index[59]	Explanatory note 10A of Part 10 of Chapter 5 Index	**Explanatory note 10A** The responsible person for undertaking the measure in Section 19 of the Queensland WRP is a person or holder of a metered entitlement (in accordance with Section 10.06 (2) of the Basin Plan).

[57] Parsons Brinckerhoff Australia Pty Limited (PB) 2011, *Queensland Murray Darling Basin, Report to Department of Environment and Resource Management: Methodology for estimating the take of groundwater for stock and domestic purposes in the Queensland Murray Darling Basin*, Report to Department of Environment and Resource Management, December 2011

[58] *Water Act 2000* (Qld) current as at 2 October 2015

[59] DNRM (2016j) Warrego-Paroo-Nebine Water Resource Plan, November 2016

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text constituting Water Resource Plan that addresses the requirement	Explanatory Notes
		Water Regulation 2002[60]	Part 7: Metering Schedule 15A: Metered entitlements	A metered entitlement is an entitlement prescribed as such under the Water Regulation 2002. For the Warrego-Paroo-Nebine plan area, all water entitlements to take surface water are metered entitlements, other than (a) water entitlements for stock or domestic purposes only and (b) water entitlements to take supplemented (regulated) water. All unsupplemented (unregulated) water allocations in the Warrego-Paroo- Nebine plan area are metered entitlements under the Water Regulation. All water allocations with installed works in the plan area have been metered. All groundwater licences and a small number of surface water licences in the Warrego-Paroo-Nebine WRP area are not metered. There is no intention to meter the remaining surface water licences due to the passive nature of diversion channel take, the small volumes involved and the difficulty in metering diversion channels. Queensland has a work standard for installation of meters. Meters must be validated post-installation then re-validated in the 12 months before the date specified in the Water Regulation.
		ROP[61]	Section 10 Metering	The ROP requires that resource operations licence holder (i.e. SunWater for the Cunnamulla Water Supply Scheme) must meter the taking of water under all water allocations and seasonal water assignments managed under their resource operations licence.

[60] Water Regulation 2002 (Qld), current as at 1 December 2015.

[61] Warrego, Paroo, Bulloo and Nebine Resource Operations Plan 2006, Amended February 2016 (Revision 1)

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text constituting Water Resource Plan that addresses the requirement	Explanatory Notes
		Queensland Interim Water Meter Standard for Non-urban Metering[62]	Document in its entirety	The interim standard facilitates the installation and use of meters. It ensures that water users installing meters do not risk subsequent costs for modification or replacement (once the national standards come into effect).
	(2) The water resource plan must specify the timeframe for implementing the measures.	This index	Explanatory note 10B of Part 10 of Chapter 5 Index	**Explanatory note 10B** The measures specified in Section 10.45(1) have been implemented in Queensland law and that, going forward, implementation of the measures will involve the ongoing operation of that law.
10.46 Monitoring water resources	(1) A water resource plan must specify the monitoring of the water resources of the water resource plan area that will be done to enable the Basin State to fulfil its reporting obligations under section 13.14. (2) Nothing in this section limits the capacity of the Basin State to conduct other monitoring of the water resources of a water resource plan area.	This index[63]	Appendix E	Appendix E identifies the water resource monitoring that will be done to enable the Basin State to fulfil its reporting obligations under section 13.14, and how that relates to specific matters identified in Schedule 12 of the Basin Plan. In particular, monitoring of water resources will enable reporting on blue green algal outbreaks, and may contribute to reporting on the achievement of environmental outcomes.
		ROP[64]	Chapter 5: Monitoring and reporting	The chief executive must collect information on water quantity, water taken, trading, pricing and ecological assets; and make ongoing assessments on whether the Queensland WRP outcomes are being achieved.

[62] DNRM (2014c), *Queensland interim water meter standard for non-urban metering*, State of Queensland, November 2014
[63] DNRM (2016j) Warrego-Paroo-Nebine Water Resource Plan, November 2016

[64] Warrego, Paroo, Bulloo and Nebine Resource Operations Plan 2006, Amended February 2016 (Revision 1).

5.11 Part 11—Reviews of water resource plans

Note: Any sections of the instruments or texts not explicitly identified in this table do not form part of this Water Resource Plan.

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text constituting Water Resource Plan that addresses the requirement	Explanatory Notes
10.47 Review of water resource plan	A water resource plan must require that if a review of the plan (or a part of the plan) is undertaken, the report of the review must be given to the Authority within 30 days after the report is completed.	This index[65]	Explanatory note 11A of Part 11 of Chapter 5 Index	**Explanatory note 11A** If a review is undertaken of the Water Resource Plan or part thereof, including the instruments and texts that constitute the Water Resource Plan, Queensland must provide a report of the review to the Authority within 30 days after the report is completed. The main instruments that constitute the Water Resource Plan are the Queensland WRP and ROP. Any review of these instruments would be accompanied by the relevant reports, including technical and scientific assessments, as required by the *Water Act 2000* (Qld) and these may also be provided to the Authority.
10.48 Amendment of water resource plan	A water resource plan must require a Basin State that proposes an amendment to the plan arising from review to give the reasons for the amendment to the Authority.	This index	Explanatory note 11B of Part 11 of Chapter 5 Index	**Explanatory note 11B** If an amendment arising from a review of the Water Resource Plan (or part thereof) is proposed, Queensland must give reasons for the proposed amendment to the Authority as per the requirements of the Basin Plan. Any proposed amendment of the Queensland WRP or ROP would be accompanied by the relevant reports, including technical and scientific assessments, as required by the *Water Act 2000* (Qld) and these may also be provided to the Authority.

[65] DNRM (2016j) Warrego-Paroo-Nebine Water Resource Plan, November 2016

5.12 Part 12—Information used to prepare water resource plan

Note: Any sections of the instruments or texts not explicitly identified in this table do not form part of this Water Resource Plan.

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text constituting Water Resource Plan that addresses the requirement	Explanatory Notes
10.49 Best available information	(1) A water resource plan must be based on the best available information.	This index[66]	Appendix F	An explanation of why the information used is the best available has been included against the relevant source listed in the appendix.
	(2) The water resource plan must identify and describe the significant sources of information on which the water resource plan is based.	This index	Appendix F	A description of the significant sources of information that materially influenced the Water Resource Plan is contained in the appendix. These include environmental assessments, socio-economic and cultural assessments, and risk assessments.
10.50 Methods used to develop water resource plan	A water resource plan must identify any significant method, model or tool that has been used to develop the water resource plan	This index	Appendix G	A description of the significant methods and models that materially influenced the development of the Water Resource Plan is contained in the appendix. The key models described are the Integrated Quantity and Quality Models (IQQM) for the Warrego, Paroo and Nebine catchments. Methods for estimating the other forms of take not captured in the IQQM are described in the Water Accounting Methods Report.
		Overview Report[67]	Appendix B	Appendix B gives a summary of the 5 key technical assessments undertaken to prepare the Queensland WRP, i.e.

[66] DNRM (2016j) Warrego-Paroo-Nebine Water Resource Plan, November 2016

[67] DNRM (2014a), *Warrego, Paroo, Bulloo and Nebine draft Water Resource Plan and amended resource operations plan: Overview report*, State of Queensland, September 2014

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text constituting Water Resource Plan that addresses the requirement	Explanatory Notes
				• Hydrologic — each of the Warrego, Paroo and Nebine IQQM were updated. • Social-economic — current and future social and economic trends across the plan area • Cultural — process to recognise Aboriginal interests and connection with water in the landscape • Environmental — including ecological asset selection; ecological monitoring and plan performance; and risks to the 9 ecological assets • Risk — 4 separate risk assessments including insufficient water available for surface water and groundwater users and for the environment; unsuitable water quality; and poor health of water-dependent ecosystems.

5.13 Part 13—Extreme events

Note: Any sections of the instruments or texts not explicitly identified in this table do not form part of this Water Resource Plan.

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text constituting Water Resource Plan that addresses the requirement	Explanatory Notes
10.51 Measures in response to extreme events	(1) A water resource plan must describe how the water resources of the water resource plan area will be managed during the following types of events: (a) an extreme dry period	*Water Act 2000* (Qld)[68]	Division 2 Restrictions for emergencies and water shortages • Sections 22 to 25	The stated *Water Act 2000* (Qld) provisions for emergency situations have never been triggered in the water resource plan area. In the *Water Act 2000* (Qld), an extreme dry period emergency would be triggered by the consequences e.g. a shortage of water requiring urgent action or a demonstrably serious risk to essential water supply needs. Such an emergency does not have specific climatic triggers e.g. the emergency may be a consequence of a dry period outside the range of experience contained in the historic climate baseline (as discussed in the in the MDBA Handbook for Practitioners). In regard to limiting the take of water when there is a shortage of water, the *Water Act 2000* (Qld) sections 22 to 25 give the Minister powers to limit or prohibit the taking of water for a stated period by a published notice or regulation. This may apply to any authority to take water under the Act. Note that the *Water Act 2000* (Qld) sections 25A to 25ZE also provide for other water supply emergencies. However the purpose of these provisions is for dealing with large urban areas such as South East Queensland. It is considered very unlikely that these provisions would be triggered in the WRP area as all town water supplies for critical human water needs are sourced from the Great Artesian Basin which is a higher quality and higher reliability of supply in general and during an

[68] *Water* Act *2000* (Qld), current as at 2 October 2015

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text constituting Water Resource Plan that addresses the requirement	Explanatory Notes
				extreme dry period. Water from the Great Artesian Basin is not a Basin water resource. As dry periods are a regular occurrence in the water resource plan area, the ROP contains robust operating and water sharing rules that provide transparent access arrangements under a wide range of water availability. It is not expected that such an extreme dry period would occur that would necessitate the provisions of the ROP to be overridden. There is no definition for **drought** listed in Queensland legislation. There is however an explanation of drought used by the Queensland Department of Agriculture, Forestry and Fisheries in discussing drought declarations. A drought declaration is an official acknowledgment by the government that an area or property is drought-stricken. However a drought declaration would not affect the continued operation of the Queensland WRP and ROP in the plan area. There are two types of drought declarations: • State declarations are triggered by severe climatic circumstances likely to occur no more than once every 10 to15 years • Commonwealth declarations are triggered by events likely to occur no more than once every 20 to 25 years. Further supporting information is given in **Appendix H**.

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text constituting Water Resource Plan that addresses the requirement	Explanatory Notes
		This Index[69]	Explanatory Note 13A of Part 13 of Chapter 5 Index	**Explanatory Note 13A** The Minister is the responsible person for undertaking the measure in Division 2 Restrictions for emergencies and water shortages section 22, in accordance with Section 10.06 (2) of the Basin Plan.
		Not for accreditation	*Not for accreditation*	Provisions under *Water Supply (Safety and reliability) Act 2008* (Qld) apply to large infrastructure constructed for the purposes of urban/town water supply and flood mitigation. Chapter 4 Part 3 Sections 388 – 398 do not apply to any in-stream storages in the water resource plan area as these weirs do not have a flood mitigation manual in force and it is unlikely that such a manual would be necessary in the future. This Act provides for the safety and reliability of water supply and includes a regulatory framework for providing water and sewerage services in the State, the regulation of referable dams and flood mitigation responsibilities. If, under the *Water Act 2000* (Qld), the Minister has published a notice (section 22), made a regulation (section 23), or made a water supply emergency declaration, the water service provider may be directed to impose restrictions on its customers' water use. In the WRP area, all town water supplies are sourced from the Great Artesian Basin which is not a Basin water resource. It is therefore unlikely that a Basin water resource will be subject to regulation for a water supply emergency for an extreme dry period.

[69] DNRM (2016j) Warrego-Paroo-Nebine Water Resource Plan, November 2016

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text constituting Water Resource Plan that addresses the requirement	Explanatory Notes
		ROP[70]	Section 18 Storing and releasing water for stock and domestic purposes Chapter 2 Part 2 Water sharing rules	This section states when releases are to be made for stock and domestic purposes downstream of Allan Tannock Weir in the Cunnamulla Water Supply Scheme. If the water level in the weir falls to a certain level then releases for stock and domestic purposes cease so as to enable retention of water for other water uses during dry periods (specifically, if it is has been more than 18 months since the weir was at full supply level). Modelling shows that such a dry period occurs once in the simulation period of over 120 years.
		This Index	Explanatory Note 13B of Part 13 of Chapter 5 Index	**Explanatory Note 13B** The resource operations licence holder is the responsible person for undertaking the measure in Section 18 of the ROP , in accordance with Section 10.06 (2) of the Basin Plan. The resource operations licence holder is the responsible person for undertaking the measure in Chapter 2 Part 2(20) of the ROP is, in accordance with Section 10.06 (2) of the Basin Plan.
	(b) a water quality event of an intensity, magnitude and duration that is sufficient to render water acutely toxic or unusable for established local uses and values;	*Environmental Protection Act 1994* (Qld)[71]	Chapter 8 Part 3C Offences relating to water contamination Chapter 7 Part 1 Environmental duties Section 319	There is only once piece of water supply infrastructure in the plan area - Allan Tannock Weir at Cunnamulla. It does not supply water for critical human water needs nor have there been any water quality incidents associated with the operation of the infrastructure. The *Environmental Protection Act 1994* (Qld) provides the framework to deal with water quality events. Any adverse water quality incidents must

[70] Warrego, Paroo, Bulloo and Nebine Resource Operations Plan 2006, Amended February 2016 (Revision 1).
[71] *Environmental Protection Act 1994* (Qld), Current as at 2 October 2015

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text constituting Water Resource Plan that addresses the requirement	Explanatory Notes
			Chapter 7 Environmental management Part 5B Clean-up notices.	be reported to the chief executive of the Department by the operator of Allan Tannock Weir. For the *Environmental Protection Act 1994* (Qld), a person must not carry out any activity that causes, or is likely to cause, environmental harm unless the person takes all reasonable and practicable measures to prevent or minimise the harm (the general environmental duty).
		This Index	Explanatory Note 13C of Part 13 of Chapter 5 Index	**Explanatory Note 13C** The responsible person for undertaking the measure in Chapter 7 Part 5B of the Environmental Protection Act is the administering authority, in accordance with Section 10.06 (2) of the Basin Plan.
		Water Act 2000 (Qld)	Division 2 Restrictions for emergencies and water shortages • Sections 22 to 25	In regard to limiting the take of water when there is a thing in harmful quantities in water, the Water Act 2000 (Qld) sections 22 to 25 give the Minister powers to limit or prohibit the taking of water for a stated period by a published notice or regulation. This may apply to any authority to take water under the Act. There have been no such events that have overridden the Queensland WRP or ROP. In regard to contamination of a water storage used for essential water supply needs causing the water to be unfit for supply, the Water Act 2000 (Qld) sections 25A to 25ZE give the Minister powers to prepare water supply emergency declarations and water supply emergency regulations that may override any provisions/rules in a ROP, resource operations licence or interim resource operations licence.

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text constituting Water Resource Plan that addresses the requirement	Explanatory Notes
				There are no relevant in-stream storages in the water resource plan area.
		Not for accreditation	*Not for accreditation* Chapter 2 Part 4 Division 1 Drinking water quality management	Chapter 2 Part 4 Division 1 of the *Water Supply (Safety and reliability) Act 2008* (Qld) generally applies to large infrastructure constructed for the purposes of urban/town water supply and flood mitigation. Drinking water service providers (e.g. local governments) are responsible for managing and operating their water supply, monitoring water quality and handling their customer complaints, and they work with the Queensland government regulators in the event of incidents. In the water resource plan area, all town water supplies are sourced from the Great Artesian Basin which is not a Basin water resource. Therefore it is unlikely this provision would be triggered for a Basin Plan resource in the water resource plan area.
	(c) any type of event that has resulted in the suspension of a statutory regional water plan in the past 50 years (including a transitional water resource plan or interim water resource plan).	*Not applicable*	*Not applicable*	There has been no extreme event of any type which has resulted in the suspension of a statutory water plan in the plan area in the past 50 years.
	(2) If an event of a type listed in subsection (1) would compromise a Basin State's ability to meet critical human water needs in the water resource plan area, the water resource plan must set out	*Water Act 2000* (Qld)	Division 2 Restrictions for emergencies and water shortages • Sections 22 to 25	In regard to limiting the take of water when there is a shortage of water, the *Water Act 2000* (Qld) sections 22 to 25 give the Minister powers to limit or prohibit the taking of water for a stated period by a published notice or regulation. This may apply to any authority to take water under the Act, including water allocations or licences owned by or granted to local governments for town water supply purposes. However these

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text constituting Water Resource Plan that addresses the requirement	Explanatory Notes
	measures to meet critical human water needs during such an event.			entitlements are typically used for watering of parks and gardens, not for critical human water needs. Note that the *Water Act 2000* (Qld) sections 25A to 25ZE also provide for other water supply emergencies. However the purpose of these provisions is for dealing with large urban areas such as South East Queensland. It is considered very unlikely that these provisions would be triggered in the WRP area as all town water supplies for critical human water needs are sourced from the Great Artesian Basin which is a higher quality and higher reliability of supply in general and during an extreme dry period. Water from the Great Artesian Basin is not a Basin water resource.

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text constituting Water Resource Plan that addresses the requirement	Explanatory Notes
	(3) The water resource plan must provide that, if new scientific information suggests a change in the likelihood of an event of a type listed in subsection (1) occurring (for example, due to climate change), consideration must be given to whether, as a result of this new information, the water resources must be managed differently.	*Water Act 2000* (Qld)	Section 39 Minister must first prepare a statement of proposals Section 46 Content of draft water resource plans Section 47 Matters the Minister must consider when preparing draft water resource plan Section 53 – 54 Periodic reports and accountability matters Section 55 When water resource plans may be amended or replaced	The planning framework in the *Water Act 2000* (Qld) contains a number of specific provisions for considering the best scientific information available. This would include new scientific information. The implementation of the Queensland WRP is reviewed for the plan's reporting period stated in the plan. It includes a summary of findings of research and monitoring for the plan and assessment of the plan's implementation having regard to any new information available about the plan's water resources. During the review of Queensland statutory water plans (every 10 or more years) new scientific information will be considered to determine if the management of the Queensland Murray–Darling Basin water resources requires reassessment. In particular, the hydrologic model developed for the WRP is extended to incorporate new data collected over the life of the previous WRP. This data would incorporate extreme dry periods and the reliability of entitlements may need re-specification in the new WRP. Plans may also be amended if during the life of the plan the outcomes, objectives or strategies are not being achieved or are no longer appropriate. This may be as a result of new scientific information including the incorporation of extreme dry periods in the hydrologic model.
		This index	Explanatory Note 13D of Part 13 of Chapter 5 Index	**Explanatory note 13D** The Minister is the responsible person for undertaking the following measures in the *Water Act 2000* (Qld) in accordance with Section 10.06 (2) of the Basin Plan: section 39 Minister must first prepare a statement of proposals; section 47 Matters the Minister must consider when preparing draft water resource plan; section 53 Minister must report on

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text constituting Water Resource Plan that addresses the requirement	Explanatory Notes
				all water resource plans; and section 55 When water resource plans may be amended or replaced.
		WRP	Section 32: Minister's report on plan—Act, s 53	The Queensland WRP states a reporting period of every 5 years for preparing the Minister's report as per the *Water Act 2000* (Qld) sections 53 – 54.

5.14 Part 14—Indigenous values and uses

Note: Any sections of the instruments or texts not explicitly identified in this table do not form part of this Water Resource Plan.

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text constituting Water Resource Plan that addresses the requirement	Explanatory Notes
10.52 Objectives and outcomes based on Indigenous values and uses	(1) (a) Identify objectives of Indigenous people in relation to managing the water resources of the WRP area	Aboriginal values and uses report[72]	Section 4.1: Objectives of Aboriginal people	The objectives of Indigenous people listed in the report were captured from consultation with Traditional Owners as well as from background information sources.
		HWMP[73]	Section 3.2.5: Objective and outcome for Aboriginal cultural, spiritual and ceremonial values and uses of water Section 4.5:Consultation with Aboriginal Nations	Section 3.2.5 presents the objective and outcome for Aboriginal cultural, spiritual and ceremonial values and uses of water which were developed in consultation with local Traditional Owners, the Northern Basin Aboriginal Nations and the former Far South West Aboriginal Natural Resource Management Group. The objective is to ensure the suitability of water to support the identified cultural, ceremonial and spiritual values and uses of waters across the South West region (the plan area). The consultation detailed in Section 4.5 describes that cultural, spiritual and ceremonial values and uses of water were identified for all South West Queensland surface waters and groundwaters, as every water site was considered special to Aboriginal people.

[72] DNRM (2016e), *Warrego, Paroo, Bulloo and Nebine water resource plan and resource operations plan: Aboriginal values and uses* State of Queensland, January 2016.

[73] Department of Environment and Heritage Protection (DEHP) (2016a), *Healthy Waters Management Plan: Warrego, Paroo, Bulloo and Nebine Basins*, State of Queensland, February 2016.

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text constituting Water Resource Plan that addresses the requirement	Explanatory Notes
		Consultation Summary Report: HWMP[74]	Section 5: Consultation with Aboriginal Nations	The consultation detailed in the 'Consultation Summary Report: Healthy Waters Management Plan for the Warrego, Paroo, Bulloo and Nebine basins' describes that cultural, spiritual and ceremonial values and uses of water were identified for all South West Queensland surface waters and groundwaters, as every water site was considered special to Aboriginal people.
	(1) (b) Identify outcomes for the management of water resources of the WRP area that are desired by Indigenous people	Aboriginal values and uses report	Section 4.2: Outcomes from water management desired by Aboriginal people	The outcomes included in the report repeat the Indigenous outcomes in the WRP and the outcome in the HWMP.
		Queensland WRP[75]	Section 13: Indigenous outcomes Section 15: Environmental flow objectives and performance indicators Section 20: Decisions to be consistent with objectives	Section 13 of the Queensland WRP includes outcomes specifically for Indigenous people. This is the first WRP in the state of Queensland to distinguish Indigenous outcomes from other social and economic outcomes. The first outcome will help to ensure that water is available for Traditional Owners for social and economic purposes and is achieved through the strategies in the Queensland WRP that specify quantities of unallocated water. Section 22 states the purpose for which unallocated water may be granted and includes for Indigenous purposes. Section 23

[74] DEHP (2016b), *Consultation Summary Report: Healthy Waters Management Plan for the Warrego, Paroo, Bulloo and Nebine Basins*, State of Queensland, February 2016

[75] Water Resource (Warrego, Paroo, Bulloo and Nebine) Plan 2016.

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text constituting Water Resource Plan that addresses the requirement	Explanatory Notes
			Section 21: Assessing impact of decisions Section 22: Purpose for which unallocated water may be granted Section 23: Reserve volumes Section 24 : Process for granting unallocated water Schedule 6: Dictionary	states the reserve volumes available in each of the catchments. Section 24 refers to the process for granting unallocated water. The second outcome maintains flows that support cultural and recreational values of Indigenous people. This outcome is achieved through the setting of environmental flow objectives and performance indicators in section 15 of the Queensland WRP. Section 20 states that decisions need to be consistent with the environmental flow objectives. Schedule 6 Dictionary defines 'Indigenous purpose' as a use for the purpose of helping an Indigenous community achieve its economic and social aspirations.
		Water Act 2000[76]	Section 20B: Aboriginal and Torres Strait Islander parties	The *Water Act 2000* (Qld) provides Traditional Owners with the authority to take water for traditional activities or cultural purposes. This amendment reflects the legislative authority provided in the *Native Title Act 1993* (Cth).
		HWMP	Section 3.2.5: Objective and outcome for Aboriginal cultural, spiritual and	Section 3.2.5 presents the objective and outcome for Aboriginal cultural, spiritual and ceremonial values and uses of water which were developed in consultation with local Traditional Owners, the NBAN and

[76] *Water Act 2000* (Qld), current as at 2 October 2015

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text constituting Water Resource Plan that addresses the requirement	Explanatory Notes
			ceremonial values and uses of water Section 4.5: Consultation with Aboriginal Nations	the former Far South West Aboriginal Natural Resource Management Group. The outcome is that South West region water resources remain fit for purpose in relation to cultural, spiritual and ceremonial values and uses of water. This reflects the terminology used for the whole of basin outcome in relation to water quality and salinity (Section 5.04 of the Basin Plan).
	(2) (a) Have regard to the social, spiritual and cultural values of Indigenous people that relate to the water resources of the WRP area (2) (b) Have regard to the social, spiritual and cultural uses of the water resources by Indigenous people	Aboriginal values and uses report	Section 4.3: Aboriginal values and uses of water Attachment 2: Summary of identified Aboriginal values and uses in the WPBN plan area	The report builds on the values and uses identified in the earlier consultation phases (see Cultural Assessment report below) with the information provided in the consultation undertaken in October 2015 on the final draft Queensland WRP and ROP. The information gathered at the final consultation phase was largely consistent with the values and uses identified in the cultural assessment report, with several new values and uses added in. It is recognised that some of the values identified by local Traditional Owners cannot be managed by a Queensland WRP as they are not directly linked to the protection of flow. However, these values were included to recognise the full range of water related values in the catchment. Attachment 2 summarises the values and uses and includes examples of the values and uses in the catchments.

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text constituting Water Resource Plan that addresses the requirement	Explanatory Notes
		Cultural assessment[77]	Chapter 3: The importance of water to Aboriginal people in the Warrego, Paroo, Bulloo and Nebine catchments Chapter 5: Supporting Aboriginal values and uses of water in the Warrego, Paroo, Bulloo and Nebine catchments Chapter 6: Development of the new water resource plan	Chapter 3 lists eleven values, uses and issues that were identified by Aboriginal people in initial consultation phases and from information from the MDBA and Queensland Department of Environment and Heritage. It recognises that the value placed on water to Aboriginal people is not restricted to physical sites and items but is all encompassing of the health and function of the environment and broader landscapes. Chapter 5 and 6 show how the issues listed above have been given regard to in current water resource plans and in the development of the new Queensland WRP.
		Overview report[78]	Appendix B Section 3:Technical assessments – Cultural assessments	The appendix to this report summarises the cultural assessment and the flow related values raised in earlier consultation and assessment phase by local Traditional Owners.

[77] DNRM (2014b), *Warrego, Paroo, Bulloo and Nebine water resource plan and amended resource operations plan: Cultural assessment*, State of Queensland, April 2014

[78] DNRM (2014a), *Warrego, Paroo, Bulloo and Nebine draft Water Resource Plan and amended resource operations plan: Overview report*, State of Queensland, September 2014

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text constituting Water Resource Plan that addresses the requirement	Explanatory Notes
		Implementation Review Report[79]	Section 4.4: Socioeconomic assessment Section 4.5: Cultural assessment	Section 4.4 refers to the socioeconomic assessment prepared as part of the review of the Queensland WRP. The plan area is home to a significant Aboriginal population with a strong history of cultural values and uses of water. Aboriginal values and uses of water need to be considered in the review of outcomes and strategies for the new plan. Section 4.5 refers to the cultural assessment prepared as part of the review of the Queensland WRP. Waterholes and streams in the plan area have important cultural values for Aboriginal groups in the region. In recognition of cultural uses of water, recent amendments to the *Water Act 2000* (Qld) include provisions for Aboriginal groups to take or interfere with water for cultural purposes or traditional activities.
		HWMP	Section 5: Social, economic, cultural and environmental values and uses – Tables 7, 8 and 9 and mapped in Figures12 and 13 Section 4.5: Consultation with Aboriginal Nations	Section 5 lists the Environmental Values for the Nebine, Warrego and Paroo drainage basins. Scheduled under the Queensland Environmental Protection (Water) Policy 2009, Environmental Values are the qualities of water that make it suitable for supporting aquatic ecosystems and human uses. Section 4.5 summarises the consultation that was conducted with local Traditional Owners, the NBAN and the former Far South West Aboriginal Natural Resource Management Group to determine values and uses of water. For further detail of this consultation, refer to the Consultation Summary Report: Healthy Waters Management Plan for the Warrego, Paroo, Bulloo and Nebine basins.

[79] DNRM (2013), *Implementation Review Report: Warrego, Paroo, Bulloo and Nebine Water Resource Plan and Resource Operations Plan*, State of Queensland, November 2013

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text constituting Water Resource Plan that addresses the requirement	Explanatory Notes
				The following documents may provide information in support of the cultural, spiritual and ceremonial value: • Caring for Water on Country in South West Queensland (South West NRM Ltd, 2012) • Planning for climate variability in south west Queensland: Yarning with Traditional Owners in south west Queensland (South West NRM Ltd, 2014). Other water quality targets will also indirectly lead to improved Aboriginal environmental outcomes, including water quality targets for the protection of the Aquatic Ecosystem Environmental Value and the recreational Environmental Values.
		Consultation Summary Report: HWMP	Section 5: Consultation with Aboriginal Nations	Section 5 of this report details the consultation that was conducted with local Traditional Owners, the NBAN and the former Far South West Aboriginal Natural Resource Management Group to determine values and uses of water. This consultation identified that water is not only valued for cultural and spiritual use, but also ceremonial use. Based on the consultation, the cultural, spiritual and ceremonial Environmental Value was applied to all South West Queensland drainage basins (including both surface water and groundwater), as every water site was considered special to Aboriginal people. The associated water quality target specified in the HWMP is to 'Protect or restore cultural, spiritual and ceremonial heritage consistent with key policies and plans.

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text constituting Water Resource Plan that addresses the requirement	Explanatory Notes
	(3) Identify opportunities to strengthen the protection of Indigenous values and uses in accordance with the objectives and outcomes	Aboriginal values and uses report	Section 4.3.15 Risks to identified values and uses Section 7 : Protection of Aboriginal values and uses	Section 4.3.15 lists the risks that have been identified by Aboriginal people during the consultation. The section also refers to a table in the HWMP that lists the risks and the associated opportunities to strengthen the protection of values and uses. Those risks and opportunities that relate to water resource planning and river flows are listed in the report in table 1. Section 7 describes how the planning instruments in the Queensland water planning framework have maintained or enhanced the protection of Indigenous values and uses.
		Queensland WRP	Section 12: Economic outcomes Section 13: :Indigenous Outcomes Section 14: Social outcomes14	Through the Indigenous, social and economic outcomes listed in Sections 12, 13 and 14 of the Queensland WRP, an improved level of protection is provided for Aboriginal people's values and uses in the plan area compared to that provided in the transitional plan.
		HWMP	Section 10: Opportunities to strengthen the protection of Aboriginal values and uses of water	Opportunities to strengthen the protection of Aboriginal values and uses were developed through consultation with) local Traditional Owners, the Northern Basin Aboriginal Nations (NBAN) and the former Far South West Aboriginal Natural Resource Management Group (Refer to Section 4.5 of the HWMP and the 'Consultation Summary Report:

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text constituting Water Resource Plan that addresses the requirement	Explanatory Notes
				Healthy Waters Management Plan for the Warrego, Paroo, Bulloo and Nebine basins'). The opportunities were designed to address the risks to Aboriginal values and uses identified in Section 8.4 of the HWMP. Note that some risks and opportunities are addressed through the Department of Natural Resources and Mines water resource planning framework. The opportunities to strengthen the protection of Aboriginal values and uses of water were identified and recorded in the Healthy Waters Management Plan to guide future projects across the South West region. Future projects will be dependent on available funding and resources. A key opportunity to strengthen the protection of Aboriginal values and uses in the plan area would be an expansion of the Federal Working on Country program or Queensland Indigenous Land and Sea Ranger program to the Warrego, Paroo, Bulloo and Nebine drainage basins. Land and sea rangers work closely with Traditional Owners, local authorities, pastoralists, schools and community groups to achieve environmental outcomes and raise awareness of the importance of looking after country.
10.53 Consultation and preparation of water	(1) A water resource plan must be prepared having regard to the views of relevant Indigenous organisations with respect to the matters identified under section 10.52 and the following matters:	Aboriginal values and uses report	Chapter 5: Consultation with Aboriginal people in preparation of the water resource plan	Chapter 5 of the report summarises the approach taken by the Queensland Government in consulting with Aboriginal people in the Water Resource Plan catchments. It deals with how the Queensland Government involved Traditional Owners in identifying the objectives, outcomes, values and uses of water throughout the planning process.

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text constituting Water Resource Plan that addresses the requirement	Explanatory Notes
resource plan	*[see Basin Plan 2012 for list of matters]*		Section 4.3.15: Risks to identified values and uses	Chapter 5 also refers to the documents and guidelines that the Queensland Government was guided by in its consultation, including Akwé: Kon Guidelines and the principles of Indigenous engagement in the Murray-Darling Basin prepared by MLDRIN and NBAN. Section 5.3 specifically deals with how the Queensland Government gave regard to Aboriginal views on Native Title and Indigenous Land Use Agreements and Aboriginal heritage during the consultation. Risks to the identified values and uses of water were raised by participants in the consultation meetings and captured in Section 4.3.15. This section also describes how the risks have been given regard to and dealt with through water resource plans and refers to the Healthy Waters Management Plan.
		Cultural assessment	Chapter 2:Getting Aboriginal voices into water planning Section 3.12:Native title claims and indigenous land use agreements Section 3.13: Initial Consultation Chapter 5: Supporting Aboriginal values and uses of water in the Warrego,	Chapter 2 provides a brief summary of consultation undertaken with Aboriginal groups in the initial consultation phases. Section 3.12 refers to the native title claims and Indigenous land use agreements identified in the catchments. The section also states that there will be opportunities to discuss with Aboriginal people concerns about registered and unregistered Aboriginal heritage in the catchments during the review of the Queensland WRP. Attachments 2 and 3 list the native title claims and Indigenous land use agreements.

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text constituting Water Resource Plan that addresses the requirement	Explanatory Notes
			Paroo, Bulloo and Nebine catchments Section 8: Attachments	Section 3.13 lists recommendations from the Aboriginal groups in discussions with the department in May 2013. These are the same recommendations addressed in the overview report. Chapter 5 looks at how the plan supports Aboriginal values and uses of water. Management arrangements protect waterholes, lakes and springs by limiting take of water from these water sources to maintain the ecological health and function of the ecosystem. This helps to maintain the health and integrity of these systems and in turn assists in the protection of cultural values that link to this water. Section 8: Attachments provides a summary of each of the consultation documents used to help compile and identify the values.
		Overview report	Section 3.3.8: Providing for traditional owner values Appendix B. Technical assessments Appendix B Section 6: Addressing the recommendations of technical assessments in the draft plans	Section 3.3.8 specifies the specific changes to the way water is managed which have been made to implement recommendations made by Traditional Owners in the plan area and throughout Qld. This includes the changes that were made to S20B of the Water Act to enable an Aboriginal party to take or interfere with water for traditional activities or cultural purposes without the need for an entitlement. App B. references the cultural assessment that utilised consultation undertaken for MDBA and the Healthy Waters Management Plan: Warrego, Paroo, Bulloo and Nebine basins. Section 6 in Appendix B provides a description of how the recommendations in the technical assessments were considered in the draft plans. Under the socio-economic assessment, it cites the

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text constituting Water Resource Plan that addresses the requirement	Explanatory Notes
				consultation undertaken with traditional owners and the related outcomes. Under the cultural assessment section, table C3 identifies the issues and values of water and how the recommendations were addressed by the new draft plans. Where values or issues cannot or will not be addressed in the plan, this is also noted.
		Implementation Review Report	Section 5.3: Aboriginal groups Chapter 6: Proposed key directions for the new draft water resource plan and resource operations plan	Section 5.3 describes the consultation undertaken with NBAN, Far South West Aboriginal NRM Group and Traditional Owners and the requests put forward during the meetings. South West NRM was invited to provide input on all stages of the plan review process and representatives attended all community consultations. SWNRM, specifically Mick McNevin, who at the time was a member of NBAN, was engaged as a consultant to facilitate the Traditional Owners Engagement Meeting in May 2013. Chapter 6 provides new directions for the new draft water resource plan, including concerns raised by the community that will need to be included in the new plans. Key issues identified included recognition of Aboriginal values and water uses. Section 6.3 provides a summary of how Aboriginal water values and uses have been recognised and considered in the new Queensland WRP.

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text constituting Water Resource Plan that addresses the requirement	Explanatory Notes
		HWMP	Section 4.5: Consultation with Aboriginal Nations Section 10: Opportunities to strengthen the protection of Aboriginal values and uses of water	Objectives and outcomes, values and uses, risks to Aboriginal values and uses and opportunities to strengthen the protection of Aboriginal values and uses were established through consultation with local Traditional Owners, the Northern Basin Aboriginal Nations and the former Far South West Aboriginal Natural Resource Management Group (Refer to Section 4.5 of the HWMP). Opportunities to strengthen the protection of Aboriginal values and uses, were included in Section 10 of the HWMP. The opportunities were designed to address the risks to Aboriginal values and uses identified through consultation.
		Consultation Summary Report: Healthy Waters Management Plan for the Warrego, Paroo, Bulloo and Nebine basins	Chapter 5: Consultation with Aboriginal Nations	Further detail of the consultation undertaken with local Traditional Owners, the NBAN and the former Far South West Aboriginal Natural Resource Management Group through the development of the HWMP is provided in the Consultation Summary Report: Healthy Waters Management Plan for the Warrego, Paroo, Bulloo and Nebine basins.
10.54 Cultural flows	A water resource plan must be prepared having regard to the views of Indigenous people with respect to cultural flows.	Aboriginal values and uses report	Chapter 6: Cultural Flows	Chapter 6 refers to how the Queensland Government gave regard to Aboriginal views on cultural flows in the review of the water resource plan. The *Water Act 2000* (Qld) includes provisions for Aboriginal people to take or interfere with water for traditional activities or cultural purposes. Additionally, provisions for sustainable management of water includes management that contributes to recognising the interests of

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text constituting Water Resource Plan that addresses the requirement	Explanatory Notes
				Aboriginal and Torres Strait Islander people and their connection with the landscape in water planning.
		Cultural assessment	Chapter 4: Discussion on cultural flows	Chapter 4 states that cultural flows will be considered along with other water values identified by local Aboriginal people to help translate the relationship that Aboriginal people have with water into the language of water planning and management.
10.55 Retention of current protection	A water resource plan must provide at least the same level of protection of Indigenous values and Indigenous uses as provided in: (a) a transitional water resource plan for the water resource plan area; or (b) an interim water resource plan for the water resource plan area.	Queensland WRP	Section 13: Indigenous Outcomes Section 22: Purpose for which unallocated water may be granted Section 23: Reserve volumes Section 24: Process for granting unallocated water	Through the Indigenous outcomes listed in Section 13 of the Queensland WRP, an improved level of protection is provided for Aboriginal people's values and uses in the plan area compared to that provided in the previous plan. Section 22 states the purposes for which reserves of unallocated water can be used, including Indigenous purposes. Section 23 states the reserve volumes available and section 24 refers to the process for granting the unallocated water reserves. Further information is provided in Chapter 7 of the Aboriginal Values and Uses Report which describes how the Queensland water planning framework has retained and improved the level of protection of Aboriginal values and uses in the review of the Queensland WRP. Reference in Chapter 7.1 is made to the strategies, environmental flow objectives and rules in the Queensland WRP and ROP that protect flows that contribute to the protection of Aboriginal values and uses. Chapter 7.2 references the legislative provisions in the *Water Act 2000*

BP Section	BP requirement	Instrument addressing BP requirements	Part of instrument or text constituting Water Resource Plan that addresses the requirement	Explanatory Notes
				(Qld) that provide water for cultural purposes and traditional activities. Chapter 7.3 refers to the reserves of unallocated water that is available to Aboriginal people in the plan area for social and economic purposes.
		Water Act 2000 (Qld)	Section 20B: Aboriginal and Torres Strait Islander parties	Section 20B refers to the amendments made to the *Water Act 2000* (Qld) in 2013 to provide Traditional Owners with the authority to take water for traditional activities or cultural purposes. This amendment reflects the legislative authority provided in the *Native Title Act 1993* (Cth).
		ROP[80]	Section 13: Addressing water resource plan outcomes Attachment 5: Links between this plan and the Water Resource (Warrego, Paroo, Bulloo and Nebine) Plan 2016	The following ROP rules provide protection for the indigenous outcomes ” • dealing with water licence applications • granting water licences for taking overland flow water • water sharing rules • operating rules • monitoring and reporting (chief executive) • resource operations licence holder monitoring and reporting

[80] Warrego, Paroo, Bulloo and Nebine Resource Operations Plan February 2006, Amended 2016 (Revision 1)

Appendix A: Instruments and texts that constitute the Water Resource Plan

The following table provides information about each of the instruments and texts that constitute the Water Resource Plan.

Instrument and/or text addressing Basin Plan requirement S10.04(2)	End date of instrument or proposed review date S10.04(4)(c)	Responsible person[81] S10.06	Version no./ date of publication S10.04(2)	Type of instrument or text	Water resources to which the instrument or text applies S10.04(3)(a)
Commonwealth Scientific and Industrial Research Organisation (CSIRO) and Sinclair Knight Merz (SKM) (2010), Sustainable Extraction Limits Derived from the Recharge Risk Assessment Method – Queensland, report to Murray-Darling Basin Authority, December 2010	No end date or review date; point in time text to inform development of WRP and ROP	Chief Executive or his/her delegate (Murray-Darling Basin Authority)	2010	Descriptive text	Sediments above the Great Artesian Basin: Warrego-Paroo-Nebine (GS60); St George Alluvium: Warrego-Paroo-Nebine (GS63); Warrego Alluvium (GS66)
Department of Environment and Heritage Protection (DEHP) (2016a), Healthy Waters Management Plan: Warrego, Paroo, Bulloo and Nebine Basins, State of Queensland, February 2016	2026	Chief Executive or his/her delegate (DEHP)	2016	Management plan	All
DEHP (2016b), Consultation Summary Report: Healthy Waters Management Plan for the Warrego, Paroo, Bulloo and Nebine Basins, State of Queensland, February 2016	No end date or review date; point in time text to inform development of HWMP	Chief Executive or his/her delegate (DEHP)	2016	Descriptive text	All
Department of Natural Resources and Mines (DNRM) (2013), Implementation Review Report: Warrego, Paroo, Bulloo and Nebine Water Resource Plan and	No end date or review date; point in time text to inform development of WRP and ROP	Chief Executive or his/her delegate (DNRM)	2013	Descriptive text	All

[81] This person is responsible for administering matters under the instrument/text. Unless otherwise stated in this plan, the person is also responsible for undertaking the measure and action,

Instrument and/or text addressing Basin Plan requirement S10.04(2)	End date of instrument or proposed review date S10.04(4)(c)	Responsible person[81] S10.06	Version no./ date of publication S10.04(2)	Type of instrument or text	Water resources to which the instrument or text applies S10.04(3)(a)
Resource Operations Plan, State of Queensland, November 2013					
DNRM (2014a), Warrego, Paroo, Bulloo and Nebine draft Water Resource Plan and amended resource operations plan: Overview report, State of Queensland, September 2014	No end date or review date; point in time text to inform development of WRP and ROP	Chief Executive or his/her delegate (DNRM)	2014	Descriptive text	All
DNRM (2014b), Warrego, Paroo, Bulloo and Nebine water resource plan and amended resource operations plan: Cultural assessment, State of Queensland, April 2014	No end date or review date; point in time text to inform development of WRP and ROP	Chief Executive or his/her delegate (DNRM)	2014	Descriptive text;	All
DNRM (2014c), Queensland interim water meter standard for non-urban metering, State of Queensland, November 2014	No end date or review date; interim standard until national standard developed	Chief Executive or his/her delegate (DNRM)	2014	Descriptive text	All
DNRM (2014d) Review of Warrego, Paroo, Bulloo and Nebine water resource and resource operations plans: Socioeconomic assessment, State of Queensland, April 2014	No end date or review date; point in time text to inform development of WRP and ROP	Chief Executive or his/her delegate (DNRM)	2014	Descriptive text	All
DNRM (2016a), Sediments above the Great Artesian Basin: Groundwater background paper, State of Queensland, February 2016	No end date or review date; point in time text to inform development of WRP and ROP	Chief Executive or his/her delegate (DNRM)	2016	Descriptive text	Sediments above the Great Artesian Basin: Warrego-Paroo-Nebine (GS60)
DNRM (2016b), St George Alluvium: Groundwater background paper, State of Queensland, February 2016	No end date or review date; point in time text to inform development of WRP and ROP	Chief Executive or his/her delegate (DNRM)	2016	Descriptive text	St George Alluvium: Warrego-Paroo-Nebine (GS63)
DNRM (2016c), Warrego Alluvium: Groundwater background paper, State of Queensland, February 2016	No end date or review date; point in time text to inform development of WRP and ROP	Chief Executive or his/her delegate (DNRM)	2016	Descriptive text	Warrego Alluvium (GS66)
DNRM (2016d), Warrego, Paroo, Bulloo and Nebine water resource plan and amended resource operations plan:	No end date or review date; point in time text to inform development of WRP and ROP	Chief Executive or his/her delegate (DNRM)	2016	Descriptive text	All

Instrument and/or text addressing Basin Plan requirement S10.04(2)	End date of instrument or proposed review date S10.04(4)(c)	Responsible person[81] S10.06	Version no./ date of publication S10.04(2)	Type of instrument or text	Water resources to which the instrument or text applies S10.04(3)(a)
Consultation report, State of Queensland, February 2016					
DNRM (2016e), Warrego, Paroo, Bulloo and Nebine water resource plan and resource operations plan: Aboriginal values and uses, State of Queensland, January 2016	No end date or review date; point in time text to inform development of WRP and ROP	Chief Executive or his/her delegate (DNRM)	2016	Descriptive Text	All
DNRM (2016f), Water Accounting Methods Report for Warrego-Paroo-Nebine Water Resource Plan, State of Queensland, November 2016	No end date or review date; document prepared for the purposes of the Basin Plan/WRP package.	Chief Executive or his/her delegate (DNRM)	November 2016	Descriptive text	All
DNRM (2016g), Warrego, Paroo, Bulloo and Nebine Water Resource Plan review, Risk assessment of insufficient water available for surface water and groundwater users, State of Queensland, February 2016	No end date or review date; point in time text to inform development of WRP and ROP	Chief Executive or his/her delegate (DNRM)	2016	Descriptive text	All
DNRM (2016h), Warrego, Paroo, Bulloo and Nebine Water Resource Plan Review: Risk assessment of insufficient water available for the environment, State of Queensland, 2016	No end date or review date; point in time text to inform development of WRP and ROP	Chief Executive or his/her delegate (DNRM)	2016	Descriptive text	All
DNRM (2016i), Murray-Darling Basin Plan Long Term Watering Plan for the Warrego, Paroo and Nebine Water Catchment, State of Queensland, January 2016	2021 or earlier, as per s.8.22 of Basin Plan 2012	Chief Executive or his/her delegate (DNRM)	2016	Descriptive text	Surface water SDLs in Warrego (SS28), Paroo (SS29) and Nebine (SS27)
DNRM (2016j) Warrego-Paroo-Nebine Water Resource Plan, November 2016	As per s.64 of the Water Act 2007 (Cth), 10 years from the date on which the plan is accredited under s.63 of the Act	Chief Executive or his/her delegate (DNRM)	November 2016	Descriptive Text	All
Department of Science, Information Technology, Innovation (DSITI) (2016a), Warrego River: Warrego River Model Results to Support Basin Plan	No end date or review date; document prepared for the purposes of the Basin Plan/WRP package.	Chief Executive or his/her delegate (DSITI)	2016	Descriptive text	Warrego (SS28)

Instrument and/or text addressing Basin Plan requirement S10.04(2)	End date of instrument or proposed review date S10.04(4)(c)	Responsible person[81] S10.06	Version no./ date of publication S10.04(2)	Type of instrument or text	Water resources to which the instrument or text applies S10.04(3)(a)
Requirements, State of Queensland, January 2016					
DSITI (2016b), Paroo River: Paroo River Model Results to Support Basin Plan Requirements, State of Queensland, January 2016	No end date or review date; document prepared for the purposes of the Basin Plan/WRP package.	Chief Executive or his/her delegate (DSITI)	2016	Descriptive text	Paroo (SS29)
DSITI (2016c), Nebine Creek: Nebine Creek Model Results to Support Basin Plan Requirements, State of Queensland, January 2016.	No end date or review date; document prepared for the purposes of the Basin Plan/WRP package.	Chief Executive or his/her delegate (DSITI)	2016	Descriptive text	Nebine (SS27)
DSITI (2016d), Warrego River: Catchment IQQM Calibration, January 2016	No end date or review date; document prepared for the purposes of the Basin Plan/WRP package.	Chief Executive or his/her delegate (DSITI)	2016	Descriptive text	Warrego (SS28)
DSITI (2016e), Paroo River: Catchment IQQM Calibration, January 2016	No end date or review date; document prepared for the purposes of the Basin Plan/WRP package.	Chief Executive or his/her delegate (DSITI)	2016	Descriptive text	Paroo (SS29)
DSITI (2016f), Nebine River: Catchment IQQM Calibration, January 2016	No end date or review date; document prepared for the purposes of the Basin Plan/WRP package.	Chief Executive or his/her delegate (DSITI)	2016	Descriptive text	Nebine (SS27)
Department of Science, Information Technology, Innovation and the Arts DSITIA (2012), Risk assessment and threat prioritisation: Bulloo, Paroo, Warrego and Nebine catchments: Stream and Estuary Assessment Program State of Queensland, June 2012.	No end date or review date; point in time text to inform development of WRP and ROP	Chief Executive or his/her delegate (DSITI)	2012	Descriptive text	All
DSITIA (2013a), Review of Water Resource (Warrego, Paroo, Bulloo and Nebine) Plan 2003 and Resource Operations Plan: Environmental	No end date or review date; point in time text to inform development of WRP and ROP	Chief Executive or his/her delegate (DSITI)	2013	Descriptive text	All

Instrument and/or text addressing Basin Plan requirement S10.04(2)	End date of instrument or proposed review date S10.04(4)(c)	Responsible person[81] S10.06	Version no./ date of publication S10.04(2)	Type of instrument or text	Water resources to which the instrument or text applies S10.04(3)(a)
Assessment Report–Stage 2, State of Queensland, October 2013					
DSITIA (2013b), Review of Water Resource (Warrego, Paroo, Bulloo and Nebine) Plan 2003, Environmental Assessment Report – Stage 1, State of Queensland, October 2013	No end date or review date; point in time text to inform development of WRP and ROP	Chief Executive or his/her delegate (DNRM)	2013	Descriptive text	All
DSITIA (2013c), Review of Water Resource (Warrego, Paroo, Bulloo and Nebine) Plan 2003 and Resource Operations Plan: Environmental risk assessment for selected ecological assets, State of Queensland, October 2013	No end date or review date; point in time text to inform development of WRP and ROP	Chief Executive or his/her delegate (DSITI)	2016	Descriptive text	All
DSITIA (2013d), Review of Water Resource (Warrego, Paroo, Bulloo and Nebine) Plan 2003 and Resource Operations Plan: Responses to independent science review, State of Queensland, October 2013	No end date or review date; point in time text to inform development of WRP and ROP	Chief Executive or his/her delegate (DSITI)	2016	Descriptive text	All
Environmental Protection Act 1994 (Qld)	No end date or review date; Act may be amended if required	Chief Executive or his/her delegate (DEHP)	Current as at 2 October 2015	Primary legislation	All
Intergovernment Agreement for the Paroo River between New South Wales and Queensland, 18th July 2003	Review in 2018, and every 10 years thereafter	Chief Executive or his/her delegate (DNRM)	2003	Intergovernmental agreement	Paroo (SS29)
Parsons Brinckerhoff Australia Pty Limited (PB) 2011, Queensland Murray Darling Basin, Report to Department of Environment and Resource Management: Methodology for estimating the take of groundwater for stock and domestic purposes, December 2011	No end date or review date; point in time text to inform development of WRP and ROP	Chief Executive or his/her delegate (DNRM)	2016	Descriptive text	Sediments above the Great Artesian Basin: Warrego-Paroo-Nebine (GS60); St George Alluvium: Warrego-Paroo-Nebine (GS63); Warrego Alluvium (GS66)

Instrument and/or text addressing Basin Plan requirement S10.04(2)	End date of instrument or proposed review date S10.04(4)(c)	Responsible person[81] S10.06	Version no./ date of publication S10.04(2)	Type of instrument or text	Water resources to which the instrument or text applies S10.04(3)(a)
SKM (2012a), Improved Assessment of the Impact of Stock and Domestic Farm Dams in Queensland: Statewide Assessment: Report 1, March 2012	No end date or review date; point in time text to inform development of WRP and ROP	Chief Executive or his/her delegate (DNRM)	2016	Descriptive text	Warrego (SS28), Paroo (SS29), Nebine (SS27)
SKM (2012b), Improved Assessment of the Impact of Stock and Domestic Farm Dams in Queensland: Statewide Assessment; Report 2, March 2012	No end date or review date; point in time text to inform development of WRP and ROP	Chief Executive or his/her delegate (DNRM)	2016	Descriptive text	Warrego (SS28), Paroo (SS29), Nebine (SS27)
Warrego, Paroo, Bulloo and Nebine Resource Operations Plan January 2006, Amended February 2016 (Revision 1)	No end date or review date; may be amended at any time to be consistent with a state WRP.	Chief Executive or his/her delegate (DNRM)	Revision 1, 2016	Statutory instrument	All
Water Act 2000 (Qld)	No end date or review date; Act may be amended if required	Chief Executive or his/her delegate (DNRM)	Current as at 2 October 2015	Primary legislation	All
Water Regulation 2002, Current as at 1 December 2015 (Qld)	No end date or review date; may be amended at any time to be consistent with Water Act 2000 (Qld)	Chief Executive or his/her delegate (DNRM)	Current as at 1 December 2015	Statutory instrument	All
Water Resource (Warrego, Paroo, Bulloo and Nebine) Plan 2016 (Qld)	1st September 2026	Minister for Natural Resources and Mines	2016	Subordinate legislation	All

Appendix B: Comparison of rules and arrangements for planned environmental water

The following table provides information in support of no net reduction in the protection of planned environmental water (s10.28).

Provision	**WRP and ROP as at 23 November 2012** **(Queensland WRP 2003; ROP 2006)**	**WRP and ROP as at February 2016** **(Queensland WRP 2016; ROP 2016)**	**Comment on level of protection of planned environmental water**
Legal protection	The water resource plan (WRP) is subordinate legislation under Queensland's water planning framework and contains arrangements for planned environmental water in the form of outcomes, strategies and environmental flow objectives. The flow event management rules and other operational arrangements to achieve the WRP strategies and outcomes are contained in the resource operations plan, which is a statutory instrument.	No change to legal status of the WRP and ROP or for offences regarding unauthorised taking of water or contravening conditions of water entitlements. Note: subject to proposed changes to the Water Act scheduled to commence in mid-2016, the legal status of the instruments may change but the provisions will still be law and will not alter the material protection provided by the instruments.	**Level of protection maintained** No change to the level of legal protection between the previous WRP/ROP and the new WRP/ROP.
Ecological outcomes	WRP s9: Water is to be allocated and managed in a way that seeks to achieve a balance in the following outcomes— (f) to achieve ecological outcomes consistent with maintaining a healthy riverine environment, floodplains and wetlands, including, for example, maintaining— (i) pool habitats, and native plants and animals associated with the habitats, in watercourses; and (ii) natural riverine habitats that sustain native plants and animals; and (iii) the natural abundance and species richness of native plants and animals associated with habitats within watercourses, riparian zones, floodplains and wetlands; and (iv) active river-forming processes, including sediment transport; and (v) the success of bird-breeding in the Currawinya Lakes system, the Paroo Overflow Lakes, the Bulloo Lakes and other significant wetland systems in the Paroo and Bulloo basins; and	WRP s11: The ecological outcomes for water in the plan area are— (a) minimisation of changes to the natural variability of flows of water that support aquatic ecosystems; and (b) maintenance of the near natural flow regime that supports the Paroo River and Bulloo River; and (c) maintenance of floodplain vegetation and wetland systems in the plan area, including— (i) Currawinya Lakes; and (ii) Paroo Overflow Lakes; and (iii) Bulloo Lakes; and (d) maintenance of flows of water in the plan area that support— (i) waterholes, other than waterholes within the storage area of a dam; and (ii) river channels; and (iii) migratory fish.	**Level of protection improved** As part of the review of the plan, the suitability and effectiveness of the first generation ecological outcomes was re-evaluated. The ecological outcomes were reviewed and modernised to reflect issues raised in technical assessments and through consultation and to ensure they are measurable and specifically related to management of flows and extraction. The technical assessments that fed into the 10 year review were based on improved hydrologic modelling and greater scientific knowledge of ecosystems and functions developed through Queensland's environmental flows assessment program. Ecological outcomes in the new WRP are more specifically linked to the ecological assets of the plan area and better reflect flow requirements of the key ecological indicators, while still representing all the attributes described in the outcomes of the previous water resource plan (i.e. no

Provision	WRP and ROP as at 23 November 2012 (Queensland WRP 2003; ROP 2006)	WRP and ROP as at February 2016 (Queensland WRP 2016; ROP 2016)	Comment on level of protection of planned environmental water
	(vi) the unique genetic diversity of aquatic plants and animals within the Bulloo basin; and (vii) the near pristine condition of riverine habitats and associated native plants and animals within the Paroo and Bulloo basins; (g) to maintain water quality at levels acceptable for water use and to support natural ecological processes;		net reduction). These outcomes will provide a basis for managing water resources to minimise the impacts of water resource development on flow patterns and the physical and natural values they support.
WRP strategy for no further take	WRP s18: Decisions not to increase amount of water taken (1) The chief executive must not make a decision that would increase the average volume of water available to be taken in the plan area. (2) Subsection (1) does not apply to a decision about unallocated water made under section 40 or 41A. (3) However, subsection (1) applies to a decision about an application, in relation to taking water under an authorisation, made but not dealt with before the commencement of this plan.	WRP s19: Decision to not increase amount of water taken (1) This section applies to a decision, other than a decision about— (a) taking unallocated water under section 24; or (b) taking or interfering with groundwater that is not in a groundwater unit. (2) The chief executive must not make a decision that would increase— (a) the average volume of water that may be taken under this plan; or (b) the total nominal entitlement for taking groundwater under this plan.	**Level of protection maintained** No change to plan provisions. The decision not to increase amount of water taken is a key strategy to prevent growth in take under entitlements, and in maintaining protection of PEW.
WRP strategy for meeting environmental flow objectives	WRP s19: Decisions consistent with objectives (1) A decision made in preparing the first resource operations plan must be consistent with the environmental flow objectives mentioned in sections 11 and 12. (2) All other decisions, including making the water allocation change rules in preparing the resource operations plan, must be consistent with— (a) the environmental flow objectives mentioned in sections 12 and 13;	WRP s20: Decisions to be consistent with objectives Decisions made by the chief executive under chapter 2 of the *Water Act 2000* (Qld) must be consistent with— (a) the environmental flow objectives stated in schedule 4;	**Level of protection maintained** No change to plan provisions. This provision ensures that decisions can only be made if there are no unacceptable impacts on other water users or the environment. Decisions about water management include a change to the location of an allocation (trading), changes to the way infrastructure is managed or a change to water access conditions. This also contributes to ensuring there is no net reduction in the level of protection of PEW.
Performance indicators and environmental flow objectives	WRP s10: The performance indicators for the environmental flow objectives are as follows— (a) end of system flow; (b) low flow;	WRP s15: (1) The environmental flow objectives for surface water for this plan are stated in schedule 4.	**Level of protection improved** The suitability of first generation performance indicators (PIs) was assessed as part of the review of the WRP and was found to have significant issues,

Provision	WRP and ROP as at 23 November 2012 (Queensland WRP 2003; ROP 2006)	WRP and ROP as at February 2016 (Queensland WRP 2016; ROP 2016)	Comment on level of protection of planned environmental water
	(c) summer flow; (d) beneficial flooding flow; (e) 1 in 2 year flood.	(2) The performance indicators for the environmental flow objectives are stated in schedule 4. Schedule 4 Environmental flow objectives and performance indicators 1 Mean annual flow 2 Days in no-flow waterhole flow periods 3 Days in low flow periods 4 Days between fish migration flow events 5 Days with river-forming flow 6 Days between floodplain inundation periods	such as poor linkage between the flow requirements of assets and the ecological outcomes. A new suite of PIs was chosen that was more appropriate for the purposes of protecting environmental flows in the plan area and that reflect 10 years of improving the scientific understanding of the interaction between water planning and environmental water. The new PIs were re-assessed in the hydrologic model and cover the range of flow components from no flow to floodplain inundation flows. The modelling compares the full entitlement scenario with the pre-development scenario. The modelling showed that due to the low level of development in the plan area, the PIs place an effective cap on the level of development. In the Warrego-Paroo-Nebine plan area, the updated PIs provide transparent protection and play a supporting role in ensuring there is no net reduction in the likelihood of the environmental outcomes being achieved and improves the links between the outcomes and components of the flow regime.
Flow event management arrangements in the Warrego	ROP Chapter 4, Part 2 s 95: Access rules for all water allocations The holder of a water allocation must not take water under the allocation unless— (a) the passing flow exceeds the flow condition for that allocation at the specified reference point on the allocation; (b) water is taken at a rate not exceeding the maximum daily rate on the allocation; (c) the allocation holder complies with any special conditions on the allocation; and	ROP Chapter 3, Part 1, s 30: Announced period for the Upper and Lower Warrego water management areas (1) Water may only be taken under a water allocation with flow and/or special conditions located in the Upper and Lower Warrego water management areas during an announced period. (2) The chief executive must announce the start and end of an announced period during which water may be taken under water allocations.	**Level of protection maintained** No change to flow event management rules in the ROP. Provisions requiring water users to commence taking only after flows have peaked, or during dry periods, 36 hours after flows have peaked have been retained without change. Note that s62 of the 2006 ROP (about the way water was released from Alan Tannoch Weir to minimise

Provision	WRP and ROP as at 23 November 2012 (Queensland WRP 2003; ROP 2006)	WRP and ROP as at February 2016 (Queensland WRP 2016; ROP 2016)	Comment on level of protection of planned environmental water
	(d) water is taken from the location specified on the allocation. s 96: Access rules for water allocations in the Upper and Lower Warrego Water Management Areas Water may only be taken under a water allocation with flow conditions in the Upper and Lower Warrego Water Management Areas during an announced period. s 97: Announced period (1) An announced period is the period of time for which the chief executive announces that water may be taken under a water allocation with flow conditions or special conditions. (2) The chief executive will determine the start and finish of an announced period having regard to the following— (a) if more than six months has passed since a passing flow greater than 1,000 megalitres per day has occurred at the 'flow reference point', an announced period must not allow water to be diverted unless— (i) the passing flow related to the flow reference point is greater than the rate specified in the flow conditions on the water allocation; and (ii) 36 hours has lapsed since the flow peak has passed; or (iii) the passing flow related to the flow reference point has exceeded the rate specified in the special conditions on the water allocation. (b) if less than six months has passed since a passing flow of greater than 1,000 megalitres per day has occurred at the flow reference point, an	(3) The chief executive will determine the start and end of an announced period having regard to the following— (a) if more than six months has passed since a passing flow greater than 1,000 megalitres per day has occurred at the flow reference point, an announced period is where— (i) the passing flow related to the flow reference point is greater than the rate specified in the flow conditions on the water allocation; and (ii) 36 hours has lapsed since the flow peak has passed; or (iii) the passing flow related to the flow reference point has exceeded the rate specified in the special conditions on the water allocation. (b) if less than six months has passed since a passing flow of greater than 1,000 megalitres per day has occurred at the flow reference point, an announced period is where— (i) the passing flow related to the flow reference point is greater than the rate specified in the flow conditions on the water allocation; and (ii) the flow peak has passed; or (iii) the passing flow related to the flow reference point has exceeded the rate specified in the special conditions on the water allocation.	adverse environmental impacts) was removed as it was a state-wide generic provision that was reviewed as being ineffective for the single-pipe outlet works in Alan Tannoch Weir. The removal of this provision does not reduce the level of protection.

Provision	WRP and ROP as at 23 November 2012 (Queensland WRP 2003; ROP 2006)	WRP and ROP as at February 2016 (Queensland WRP 2016; ROP 2016)	Comment on level of protection of planned environmental water
	announced period must not allow water to be diverted unless— (i) the passing flow related to the flow reference point is greater than the rate specified in the flow conditions on the water allocation; and (ii) the flow peak has passed; or (iii) the passing flow related to the flow reference point has exceeded the rate specified in the special conditions on the water allocation. (3) The chief executive will notify holders of flow conditioned water allocation of the start and end of each announced period.		
Passing flows and waterholes	ROP Chapter 4, Part 3 s 105 Change of location for allocations with nil passing flow condition (1) This section applies to a water allocation that has a flow condition that allows water to be taken when there is no passing flow ('a nil passing flow condition'). (2) A change to the location on the allocation is permitted provided— (a) there is no change to the zone from which water may be taken; (b) after the change is made, the allocation includes the following special condition: 'Taking water under this water allocation is prohibited whenever the water level in the waterhole is less than 0.5 metres below the level at which it naturally overflows'; (c) after the change is made, the 'place' component of the location of the water allocation must be limited to an area no larger than the ponded area of the waterhole from which the water will be taken; (d) if the change will allow water to be taken from a different waterhole, the holder of the allocation has the written consent of—	ROP Chapter 3 Part 2 s 34 Change of location (1) This section applies to a water allocation that has a flow condition that allows water to be taken when there is no passing flow ('a nil passing flow condition'). (2) A change to the location for the taking of water under a water allocation is permitted provided — (a) there is no change to the zone from which water may be taken; (b) after the change is made, the 'place' component of the location of the water allocation is limited to an area no larger than the ponded area of the waterhole or weir from which the water will be taken; and (c) after the change is made, the allocation can only take water from a waterhole or weir when there is a visible flow passing downstream of the waterhole or weir control.	The new resource operations plan has provided a transitional approach to increasing the level of protection for waterhole refugia. When the location of a water allocation is changed from one waterhole to another waterhole or to a different location on the same waterhole, the water allocation must have a special condition applied to it whereby water can only be taken when there is a visible flow downstream of the waterhole or weir control. The previous resource operations plan allowed for take of water from the waterhole at that new location when the water level was 0.5 m below the level at which it naturally overflows.

Provision	WRP and ROP as at 23 November 2012 (Queensland WRP 2003; ROP 2006)	WRP and ROP as at February 2016 (Queensland WRP 2016; ROP 2016)	Comment on level of protection of planned environmental water
	(i) the owners of land adjacent to the waterhole; and (ii) the holders of any water allocations with a nil passing flow condition that can take water from the waterhole; and (e) if the change will allow water to be taken from within the full supply level of an authorised weir, the holder of the allocation has the written consent of the owner of the weir.		
Take of water for prescribed activities	The Queensland *Water Act 2000* (Qld) (s 20(2)) allows for the take of water for prescribed activities anywhere in the plan area without the need for a licence. Prescribed activities include such activities as: • washing down a dairy • constructing infrastructure on a farm • constructing and maintaining infrastructure approved under an interim resource operations licence, resource operations licence or a distribution operations licence • rehabilitating riparian land. The Water Act also allows a WRP to place particular limitations on this take when required. The first generation and draft WRP did not propose any limitations on the take of water for prescribed activities.	WRP s25: Limitation on taking or interfering with water— *Water Act 2000* (Qld), s 20(2) The total volume of water that may be taken or interfered with for an activity prescribed for section 20(2)(a) of the *Water Act 2000* (Qld) is— (a) for water taken from part of a watercourse in the plan area that is used for distribution of water by a resource operations licence holder—0ML; and (b) for water taken from anywhere else in the plan area—2ML.	**Level of protection improved** The new WRP places a limit on the take of water for prescribed activities as provided for under the Water Act. This is to ensure the take of water does not exceed that which is sustainable under the Basin Plan.
Groundwater provisions	No provisions	WRP s29: Limitation on taking or interfering with groundwater— *Water Act 2000* (Qld), s 20(2)(c) (1) A person may take or interfere with groundwater in a groundwater unit only— (a) under a water licence or water permit; or (b) for stock or domestic purposes; or (c) for an activity prescribed for section 20(2)(a) of the *Water Act 2000* (Qld).	**Level of protection improved** The new WRP includes management arrangements for subartesian groundwater.

Provision	WRP and ROP as at 23 November 2012 (Queensland WRP 2003; ROP 2006)	WRP and ROP as at February 2016 (Queensland WRP 2016; ROP 2016)	Comment on level of protection of planned environmental water
		(2) However, a person must not take or interfere with groundwater under subsection (1)(c) from the St George Alluvium (deep).	

Appendix C1: Water quality targets developed under sections 10.32(3) and 10.32(4)

Table 1: Water quality targets for fresh water-dependent ecosystems (declared Ramsar wetlands: Currawinya Lakes Ramsar site)

Table 1 below presents a comparison between the objectively determined local water quality range for the Lower Paroo water type and the target values specified in Schedule 11 of the Basin Plan. The Currawinya Lakes Ramsar site is located within the Lower Paroo water type. The accreditation of the water quality range (20th, 50th and 80th percentiles) under the WQM Plan seeks to ensure no deterioration of water quality to protect Declared Ramsar wetlands.

- Values highlighted blue are water quality target values for accreditation under section 10.32(3) of the Basin Plan. These values are included in Table 29A of the HWMP.
- Values highlighted orange are water quality target values for accreditation under section 10.32(4) of the Basin Plan. These values are included in Table 29A of the HWMP

Table 1
Note 1—Based on inflows from Lower Paroo streams and rivers under event (high) flow conditions.
Note 2—Based on best available data, the turbidity target is provided as either Nephelometric Turbidity Units (NTU) or Formazin Turbidity Units (FTU).

Location	Detailed location	Alternative	Basin Plan	Alternative	Basin Plan	Alternative	Basin Plan	Alternative	Basin Plan
		Turbidity (Note 2)	**Turbidity**	**Total Phosphorus**	**Total Phosphorus**	**Total Nitrogen**	**Total Nitrogen**	**pH**	**pH**
		(20th, 50th, 80th percentiles)	NTU (Annual median)	µg/L (20th, 50th, 80th percentiles)	µg/L (Annual median)	µg/L (20th, 50th, 80th percentiles)	µg/L (Annual median)	(20th, 50th, 80th, percentiles)	(Annual median within the range)
Lower Paroo	**Streams and rivers**	**Baseflow** 20th: 400 NTU	450	**Baseflow** 20th: 140	220	**Baseflow** 20th: 750	890	No alternative target	6.5-8.0

		50th: 540 NTU		50th: 180		50th: 880		value proposed.	
		80th: 730 NTU		80th: 260		80th: 1100			
		High flow		**High flow**		**High flow**			
		20th: 470 NTU		20th: 140		20th: 550			
		50th: 580 NTU		50th: 170		50th: 680			
		80th: 800 NTU		80th: 210		80th: 860			
	Lake Numalla		100	**High flow (Note 1)**	25	**High flow (Note 1)**	1000	20th: 8.3	6.5-9.0
		20th: 55 FTU		20th: 140		20th: 550		50th: 9.1	
		50th: 100 FTU		50th: 170		50th: 680		80th: 9.2	
		80th: 180 FTU		80th: 210		80th: 860			
	Lake Yumberarra		100	**High flow (Note 1)**	25	**High flow (Note 1)**	1000	20th: 9.0	6.5-9.0
		20th: 6 FTU		20th: 140		20th: 550		50th: 9.5	
		50th: 14 FTU		50th: 170		50th: 680		80th: 10	

		80th: 65 FTU		80th: 210		80th: 860			
	Lake Karatta		100	**High flow (Note 1)**	25	**High flow (Note 1)**	1000	20th: 7.9	6.5-9.0
		20th: 35 FTU		20th: 140		20th: 550		50th: 8.8	
		50th: 190 FTU		50th: 170		50th: 680		80th: 9.1	
		80th: 600 FTU		80th: 210		80th: 860			
	Kaponyee Lakes		100	**High flow (Note 1)**	25	**High flow** (Note 1)	1000	No alternative target value proposed.	6.5-9.0
		20th: 55 FTU		20th: 140		20th: 550			
		50th: 100 FTU		50th: 170		50th: 680			
		80th: 180 FTU		80th: 210		80th: 860			
	Lake Wyara		100	**High flow (Note 1)**	25	**High flow (Note 1)**	1000	9.8 (mean)	6.5-9.0
		10 FTU (mean)		20th: 140		20th: 550			
				50th: 170		50th: 680			
				80th: 210		80th: 860			

Table 2: Water quality targets for fresh water-dependent ecosystems (other than declared Ramsar wetlands)

The table below presents a comparison between the objectively determined local water quality values for the 12 water types in the Warrego, Paroo and Nebine basins and the target values specified in Schedule 11 of the Basin Plan. Accrediting the locally derived water quality target values is more appropriate to protect and restore water-dependent ecosystems at a local scale. The water quality target values apply to baseflow conditions, unless otherwise indicated.

- Values highlighted blue are water quality target values for accreditation under section 10.32(3) of the Basin Plan. These values are included in Tables 24A, 25A and 26A of the HWMP.
- Values highlighted orange are water quality target values for accreditation under section 10.32(4) of the Basin Plan. These values are included in Tables 24A, 25A and 26A of the HWMP.

Table 2

Location	WQM Plan	Basin Plan	WQM Plan	Basin Plan	WQM Plan	Basin Plan	WQM Plan	Basin Plan
	Turbidity	**Turbidity**	**Total Phosphorus**	**Total Phosphorus**	**Total Nitrogen**	**Total Nitrogen**	**pH**	**pH**
	NTU	NTU	µg/L	µg/L	µg/L	µg/L	(Annual median within the range)	(Annual median within the range)
	(Annual median)	(Annual median)	(Annual median)	(Annual median)	(Annual median)	(Annual median)		
Upper Mungallala and Wallam Creeks	50	270	50	450	830	2000	6.5-8.0	7.0-8.5
Lower Mungallala and Wallam Creeks	50	700	50	300	830	1000	No alternative target value proposed.	6.5-8.0
Upper Nebine Creek	660	270	390	450	1020	2000	6.5-8.0	7.0-8.5
Lower Nebine Creek	660	700	390	300	1020	1000	No alternative target value proposed.	6.5-8.0

Upper Warrego	25	270	170	450	720	2000	7.0-8.0	7.0-8.5
Mid Warrego	Baseflow: 210	270	Baseflow: 190	450	Base flow: 910	2000	7.0-8.0	7.0-8.5
	High flow: 650		High flow: 850		High flow: 2100			
Lower Warrego	Baseflow: 210	700	Baseflow: 180	300	Baseflow: 620	1000	7.0-8.0	6.5-8.0
	High flow: 760		High flow: 320		High flow: 1100			
Upper Paroo	310	700	180	300	930	1000	No alternative target value proposed.	6.5-8.0
Lower Paroo	Baseflow: 540	700	Baseflow: 180	300	Baseflow: 880	1000	No alternative target value proposed.	6.5-8.0
	High flow: 580		High flow: 170		High flow: 680			
Ward River	410	270	170	450	720	2000	7.0-8.0	7.0-8.5
Carnarvon Sandstones	15	270	170	450	720	2000	7.0-8.0	7.0-8.5
Ambathala Creek	210	270	190	450	910	2000	7.0-8.0	7.0-8.5

Appendix C2: Justification for better water quality target values (Section 10.32(3))

The Department of Environment and Heritage Protection considered the default application of Basin Plan water quality targets for fresh water-dependent ecosystems as inappropriate as the targets were developed for a broad spatial scale that does not reflect the variation in local water types across the Warrego, Paroo, and Nebine drainage basins. Where data was available at a finer spatial scale, objectively determined water quality targets that reflect local conditions were developed. This is to ensure the quality of water is sufficient to protect and restore water-dependent ecosystems at a local scale.

Local water quality target values for fresh water-dependent ecosystems were objectively determined in accordance with the Queensland water quality framework. In Queensland, water quality target values are developed under the frameworks outlined in the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC, 2000) and the Queensland Water Quality Guidelines. A full description of the procedure used to determine the local water quality target values is described in Appendix 2 of the HWMP for the Warrego, Paroo, Bulloo and Nebine basins.

Declared Ramsar wetlands:
Refer to Appendix C1 – Table 1

Currawinya lakes Ramsar site - Streams and rivers*:*
The Currawinya Lakes Ramsar site is located within the Lower Paroo local water type. As a result, objectively determined local water quality target values relating to streams and rivers in the Currawinya Lakes Ramsar site were derived from the water quality target values for the Lower Paroo water type. These water quality target values were compared to the water quality target values presented in Schedule 11 of the Basin Plan (See Appendix C1 – Table 1). The 50th percentile (median) values highlighted blue in Appendix C1 – Table 1 are accredited water quality target values under section 10.32(3) of the Basin Plan as they are better than the water quality target values identified under the Basin Plan. The water quality target values were separated into baseflow and high flow water quality target values where data permitted.

Currawinya lakes Ramsar site - Lakes and wetlands*:*
The 50th percentile (median) values highlighted blue in Appendix C1 – Table 1 are accredited water quality target values under section 10.32(3) of the Basin Plan as they are better than the target values identified in Section 9.16 and Schedule 11of the Basin Plan.

Other water-dependent ecosystems:
Refer to Appendix C1 – Table 2 for a comparison between the local water quality target values developed for the plan area and the water quality target values set out in Section 9.16 and Schedule 11 of the Basin Plan.

Of a total of 53 alternative water quality target values for Turbidity, Total Phosphorus, Total Nitrogen and pH across 12 local water types (including baseflow and high flow splits where available), 77% (41 values) are better than the target values set out in Schedule 11 of the Basin Plan. For the purposes of the WQM Plan, these 41 values highlighted blue in Appendix C1 – Table 2 are the water quality targets for accreditation under section 10.32(3) of the Basin Plan for Turbidity, Total Phosphorus, Total Nitrogen and pH for water dependent ecosystems other than declared Ramsar wetlands. These water quality target values are better than the water quality target values set out in Section 9.16 and Schedule 11 of the Basin Plan.

Appendix C3: Justification for alternative water quality target values (Section 10.32(4))

The Department of Environment and Heritage Protection considered the default application of Basin Plan water quality targets for fresh water-dependent ecosystems as inappropriate as the targets were developed for a broad spatial scale that does not reflect the variation in local water types across the Warrego, Paroo and Nebine drainage basins. Where data was available at a finer spatial scale, alternative water quality targets that reflect local conditions were developed. This is to ensure the quality of water is sufficient to protect and restore water-dependent ecosystems at a local scale. Local alternative water quality target values were developed in accordance with the Queensland water quality framework. In Queensland, water quality

target values are developed under the frameworks outlined in the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC, 2000) and the Queensland Water Quality Guidelines. A full description of the procedure used to determine the local water quality target values is described in Appendix 2 of the HWMP for the Warrego, Paroo, Bulloo and Nebine basins.

Declared Ramsar wetlands:

The Currawinya Lakes Ramsar site is classified as a High Ecological Value area under the HWMP for the Warrego, Paroo, Bulloo and Nebine basins. Under the Queensland legislative water quality framework, the water quality targets for High Ecological Value waters are that the 20th, 50th and 80th per centile values for each indicator are maintained. This seeks to ensure no deterioration of the existing water quality range to protect the High Ecological Value aquatic ecosystems, including declared Ramsar wetlands.

Currawinya Lakes Ramsar site – Streams and rivers*:*

The Currawinya Lakes Ramsar site is located within the Lower Paroo local water type. As a result, the local water quality target values relating to streams and rivers in the Currawinya Lakes Ramsar site were derived from the water quality target values for the Lower Paroo water type. Refer to Appendix C1 – Table 1 for a comparison between the local water quality target values developed for the Lower Paroo water type and the water quality target values set out in Schedule 11 of the Basin Plan.

For the purposes of the WQM Plan, the values highlighted orange in Appendix C1 – Table 1 are the alternative water quality target values for accreditation under section 10.32(4) of the Basin Plan. These values are included in Table 29A of the HWMP. The accreditation of the water quality range (20th, 50th and 80th per centiles) under the WQM Plan seeks to ensure no deterioration of existing quality to protect Declared Ramsar wetlands.

Currawinya Lakes Ramsar site – Lakes and wetlands:

The local water quality target values for lakes and wetlands for both Turbidity and pH were derived from Timms (1997) and Porter et al. (2007)[82]. The water quality target values for Total Phosphorus and Total Nitrogen are the high flow water quality target values for the Lower Paroo catchment waters. This is the most relevant local water quality data available for Total Phosphorus and Total Nitrogen for Currawinya Ramsar site lakes and wetlands. The Currawinya Ramsar site lakes and wetlands are filled by the inflows from the Lower Paroo catchment waters. For the purposes of the WQM Plan, the values highlighted orange in Appendix C1 – Table 1 are the alternative water quality target values for accreditation under section 10.32(4) of the Basin Plan. These values are included in Table 29A of the HWMP.

The accreditation of the water quality range (20th, 50th and 80th per centiles) under the WQM Plan seeks to ensure no deterioration of existing quality to protect Declared Ramsar wetlands.

[82] Timms, B.V. 1997. *A study of the wetlands of Currawinya National Park*. A report for the Queensland Department of Environment, Toowoomba, Queensland.
Porter, J.L., Kingsford, R.T. and Brock, M.A. 2007. Seed banks in arid wetlands with contrasting flooding, salinity and turbidity regimes. *Plant Ecology* 188:215-234.

Other water-dependent ecosystems:

Refer to Appendix C1 – Table 2 for a comparison between the local water quality target values developed for the plan area and the Schedule 11 water quality target values from the Basin Plan. For the purposes of the WQM Plan, the 12 values highlighted orange in Appendix C1 are the alternative water quality target values for accreditation under section 10.32(4) of the Basin Plan for Turbidity, Total Phosphorus, Total Nitrogen and pH for water dependent ecosystems other than declared Ramsar wetlands. These values are included in Tables 24A, 25A and 26A of the HWMP.

Justification for specifying alternative water quality values:

(a) As the alternative water quality target values have been developed at a finer spatial scale using local data collection, they can provide better consistency with the objectives in Part 3, Chapter 9 of the Basin Plan.

(b) The alternative water quality guidelines were derived in accordance with the Queensland legislative water quality framework which is consistent with the procedures set out in the ANZECC Guidelines. The method for determining the alternative water quality target values is described in Appendix 2 of the HWMP for the Warrego, Paroo, Bulloo and Nebine basins.

(c) Refining the water quality targets in Schedule 11 of the Basin Plan based on local water quality data provides more appropriate targets that provide the best opportunity to achieve objectives and outcomes for water quality in the Warrego, Paroo, Bulloo and Nebine drainage basins. The water quality target application zones defined by the Basin Plan are at a scale too coarse to achieve the objective to protect and restore water-dependent ecosystems. Based on geo-biophysical analysis, the Water Quality Technical Panel defined 12 local water types for the Warrego, Paroo and Nebine basins. In comparison, the Basin Plan separated the same region into only two Water Quality Zones. The default Basin Plan target values therefore set unachievable or unrealistic benchmarks for particular indicators of water quality due to the low resolution of the Water Quality Zones. The alternative water quality target values seek to preserve the existing, local water quality and ensure no further deterioration. The alternative water quality target values were divided into baseflow and high flow water quality target values where possible to further increase the appropriateness of the water quality target values to local conditions. Additional water quality target values are recognised to support the accredited water quality target values. The Basin Plan selected a limited set of indicators in Schedule 11, whereas an expanded range of water quality indicators is recognised to protect and restore water quality for fresh water-dependent ecosystems.

(d) Queensland consulted with New South Wales on the proposed alternative water quality target values in April 2015 and considered their feedback in an update to the target values (Refer to Section 4.7 and 13 of the HWMP). The alternative water quality target values do not lead to a deterioration of current water quality in New South Wales, as they establish the existing water quality that flows across the border. The locally relevant water quality target values developed for the Currawinya Lakes Ramsar site are a more appropriate reflection of the water quality that flows to the Paroo River Wetlands Ramsar site in New South Wales. Further consultation also occurred through meetings with the local community, the former Far South West Aboriginal Natural Resource Management Group and the NBAN.

Refer to Appendix 2 of the HWMP for further information on the development of alternative water quality target values.

Appendix D1: Measures that contribute to the achievement of objectives

Appendix D1 – Table 1: Measures under section 10.33 of the Basin Plan

	Section 10.33(1)	Section 10.33(2)(a)	Section 10.33(2)(b)	Section 10.33(2)(c)
Measure	**Objective/s measure contributes towards achieving**	**Regard to the causes, or likely causes, of water quality degradation identified in accordance with section 10.30**	**Target values identified in accordance with section 10.32**	**The targets in Division 4 of Part 4 of Chapter 9.**
1. Establishment of Environmental Values (EVs) and Water Quality Objectives (WQOs) for the waters of the Warrego, Paroo and Nebine plan area under Schedule 1 of the Queensland *Environmental Protection (Water) Policy 2009*, to inform statutory and non-statutory planning and decision-making.	• Section 9.04 – Objectives of water-dependent ecosystems • Section 9.05 – Objectives for raw water for treatment for human consumption • Section 9.06 – Objective for irrigation water • Section 9.07 – Objective for recreational water quality • Section 9.08 – Objective to maintain good levels of water quality **Note**: Refer to the additional information for Measure 1 below this table.	• As part of the statutory process to develop EVs and WQOs for Queensland Waters, the economic and social impacts of protecting environmental values must be considered. • The key causes, or likely causes, of water quality degradation identified in accordance with section 10.30 were used as the basis to assess the impact to social, cultural, economic and environmental values. • The key causes, or likely causes, of water quality degradation underpinned the risk assessment of water being of a quality unsuitable for use. •	The following target values identified in accordance with section 10.32 will be recommended for inclusion in Schedule 1 of the EPP Water as Water Quality Objectives to inform statutory and non-statutory planning and decision-making in the plan area to maintain and improve water quality: **For fresh water-dependent ecosystems:** <u>Declared Ramsar Wetlands</u> • Currawinya Lakes Ramsar site: Table 29A <u>Other water-dependent ecosystems:</u> • Nebine drainage basin: Table 24A • Warrego drainage basin: Table 25A • Paroo drainage basin: Table 26A	The water quality target values for long-term salinity planning and management referred to in Division 4 of Part 4 of Chapter 9 will be recommended for inclusion in Schedule 1 of the EPP Water as Water Quality Objectives to inform statutory and non-statutory planning and decision-making.

			For irrigation water: No applicable water quality target values were identified for the plan area. **For recreational purposes are:** Table 70 provision (1) for primary, secondary and visual recreation.	
2. Limiting any increase in the take of groundwater from the lower part of the St George Alluvium management unit through the following provisions in the *Water Resource (Warrego, Paroo, Bulloo and Nebine) Plan 2016*, to address a medium risk of salinity: • Section 19: Decision to not increase amount of water taken • Section 29 (2): Limitation on taking or interfering with groundwater—Act, s 20(2)(c).	This measure seeks to achieve the Objectives for water-dependent ecosystems (Section 9.04), to ensure the St George Alluvium (deep) ecosystem and the ecosystem functions that depend on this resource, are protected from the risk of increased salinity. This will ensure salinity remains at existing levels and that the quality of water will be sufficient to maintain the resilience of the St George Alluvium (deep) ecosystem over the life of the plan. Note that under the Queensland water planning framework, the St George Alluvium management unit is divided into a deep and shallow component to reflect different management arrangements for each.	An elevated level of salinity was identified as a medium risk for the St George Alluvium (Deep), if further take from the deep part of this management unit is permitted. This results from highly saline upper aquifer water draining to the lower aquifer. This was determined through a risk assessment which assessed the likelihood and consequence of the key causes, or likely causes, of water quality degradation in the plan area, as identified in accordance with section 10.30 of the Basin Plan.	• The water quality targets for fresh water-dependent ecosystems identified in accordance with section 10.32 apply to streams, rivers, lakes and wetlands and are therefore not applicable to groundwater. • The water quality targets for irrigation water identified in accordance with section 10.32 apply at sites where water is extracted by an irrigation infrastructure operator for the purpose of irrigation and there are no relevant sites in the plan area that meet this requirement. • The water quality targets for recreational	Not applicable as the targets in Division 4 of Part 4 of Chapter 9 are for the purposes of long-term salinity planning and management at End-of-Valley surface water sites. Refer to Measure 3.

			water are not applicable to groundwater.	
3. Implementation of Basin Salinity Management 2030 in Queensland, in accordance with Schedule B of Schedule 1 of the Commonwealth Water Act 2007 (and as revised) – for the purposes of long-term salinity planning and management.	This measure seeks to achieve the Objectives of water-dependent ecosystems (Section 9.04) by maintaining salinity at targets set at End-of-Valley sites in the Paroo and Warrego drainage basins to protect the Murray-Darling Basin ecosystem and its functions from the impacts of high salt concentrations. Maintaining salinity within End-of-Valley targets will ensure ecosystems remain resilient to future risks and threats.	Elevated levels of salinity based on the causes, or key causes, of water quality degradation identified in section 10.30 of the Basin Plan were assessed as a low risk for surface waters in the plan area. Measure 3 addresses the key causes, or likely causes, of water quality by monitoring and reporting salinity levels at End-of-Valley sites in the Warrego and Paroo drainage basins to ensure the risk of salinity does not increase over the long-term	Not applicable as the target values identified in accordance with section 10.32 are not salinity targets for the purposes of long-term salinity planning and management.	Under Measure 3, the Queensland Government will continue to monitor End-of-Valley targets in accordance with Division 4 of Part 4 of Chapter 9 for the purposes of performing long-term salinity planning and management functions.

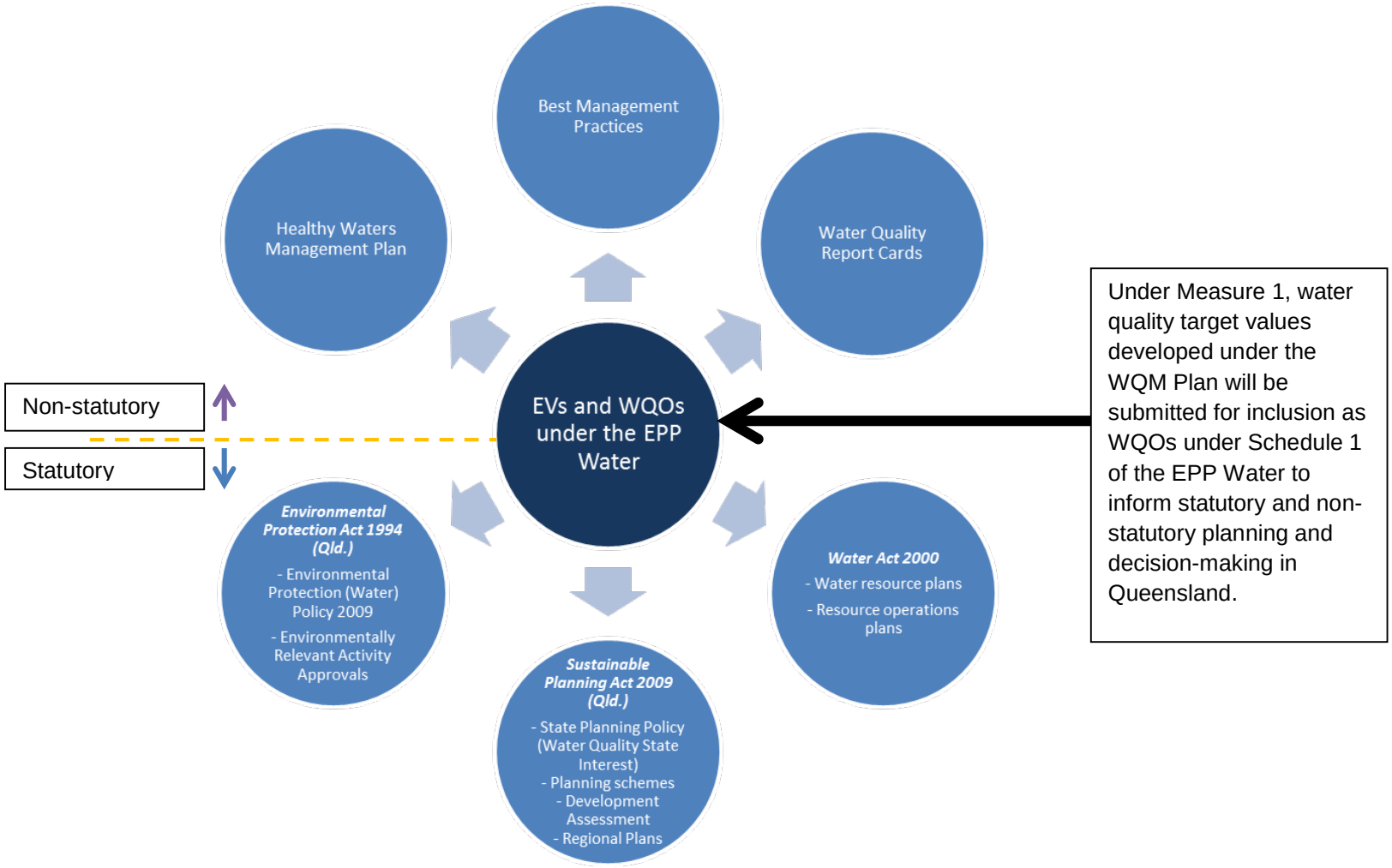
Measure 1 – Additional information

The quality of natural waters in Queensland (e.g. water in rivers, creeks, wetlands, lakes, estuaries and coastal areas and ground waters) is protected under the *Environmental Protection (Water) Policy 2009* (EPP Water). The EPP Water achieves the object of the *Environmental Protection Act 1994* (EP Act) to protect Queensland's waters while supporting ecologically sustainable development. Queensland waters include water in rivers, streams, wetlands, lakes and aquifers. Within the Queensland water quality management framework, Environmental Values (EVs) and Water Quality Objectives (WQOs) are included in Schedule 1 of the EPP Water to inform statutory and non-statutory planning and decision-making. EVs and WQOs are developed by the Department of Environment and Heritage Protection, in consultation with a variety of stakeholders including government, industry groups, local Aboriginal Nations and the community.

EVs define the uses of the water in a specified plan area for aquatic ecosystems and for human uses (e.g. drinking water, irrigation, recreation, etc). Setting EVs through community and stakeholder consultation reflects how a local region values and uses water. Accompanying WQOs then seek to

define what the quality of water should be to protect the identified EVs. WQOs define objectives for the physical characteristics of the water (e.g. nitrogen content, dissolved oxygen, turbidity, etc). Under Measure 1, water quality target values specified in the Queensland WRP package within the WQM Plan for the Warrego, Paroo and Nebine plan area, as well as related EVs, will be submitted for inclusion under Schedule 1 of the EPP Water to inform statutory and non-statutory planning and decision-making.

Appendix D1 – Figure 1 summarises the ways in which EVs and WQOs can be used in statutory and non-statutory planning and decision-making. EVs and WQOs become part of the legislation by being included in Schedule 1 of the EPP Water. Under Queensland legislation, conditions can be placed on regulated activities relating to urban diffuse, rural diffuse and point-source discharges to reduce or avoid potential impacts to the receiving waters through consideration of scheduled EVs and WQOs. Once scheduled, local EVs and WQOs will inform planning and decision making for development under the *Environmental Protection Act 1994* (Qld.) (e.g. point source environmentally relevant activities); local government planning and decision making for urban land development under the State Planning Policy (Water Quality State Interest – *Sustainable Planning Act 2009* (Qld.)); best practice management approaches to address diffuse emissions from rural lands; development of report cards on aquatic ecosystem health where funded programs are available; and non-statutory catchment scale planning and management decisions by regional natural resource management bodies. Guidelines also apply to ensure blue-green algae events are not impacting on consumptive water supplies or recreational water bodies.



Appendix D1 - Figure 1: The linkages between EVs and WQOs under the Queensland EPP Water and statutory and non-statutory activities

Appendix D1 - Table 2 presents the linkages between objectives specified in sections 9.04-9.07 of the Basin Plan and the corresponding EVs and WQOs that will be scheduled under the EPP Water to inform statutory and non-statutory planning and decision-making. This establishes how Measure 1 contributes to the achievement of objectives 9.04-9.07.

With regard to the objective specified in section 9.08 of the Basin Plan (Objective to maintain good water quality), Measure 1 achieves this by scheduling the alternative water quality targets developed for the plan area under the WQM Plan as WQOs under the EPP Act. In the majority of cases, the alternative water quality targets based on local data were at a level that is better than the target values specified in Schedule 11 of the Basin Plan. For example – with reference to the water quality targets for other water-dependent ecosystems - of a total of 53 alternative water quality target values for Turbidity, Total Phosphorus, Total Nitrogen and pH across 12 local water types (including baseflow and high flow splits where available), 77% (41 values) are better than the target values presented in Schedule 11 of the Basin Plan. Once scheduled, section 14 of the EPP Water (Management intent for waters) will apply. The management intent for waters is consistent with Section 9.08 - Objective to maintain good levels of water quality (Refer to Appendix D1 – Table 3). In high ecological value (HEV) areas, WQOs are to be maintained. In slightly disturbed (SD) areas, water quality is to be improved such that the WQOs are achieved for HEV waters. In moderately disturbed areas, if water quality meets the WQOs, it is to be maintained, or if it does not, water quality is to be improved to meet the WQOs.

Appendix D1 - Table 2: Linkages between objectives specified in Sections 9.04-9.07 of the Basin Plan and the EVs/WQOs framework

Objective	Corresponding Environmental Value (EV)	Corresponding Water Quality Objective (WQO)
Section 9.04 – Objectives of water-dependent ecosystems	Aquatic Ecosystem EV	Water quality targets for the protection of the Aquatic Ecosystem EV – for moderately disturbed aquatic ecosystems, slightly disturbed aquatic ecosystems and high ecological value aquatic ecosystems - including Currawinya Lakes Ramsar Site.
Section 9.05 – Objectives for raw water for treatment for human consumption	Drinking Water EV	Water quality targets for drinking water – Suitability for drinking water supply.
Section 9.06 – Objective for irrigation water	Primary Industry – Irrigation EV	Water quality targets for primary industry – Suitability for irrigation.
Section 9.07 – Objective for recreational water quality	Primary Recreation EV Secondary Recreation EV Visual Recreation EV	Water quality targets for the protection of the Primary, Secondary and Visual Recreation EVs – Suitability for primary, secondary and visual recreation

Appendix D1 – Table 3: Management intent under the EPP Water for levels of aquatic ecosystem protection

Level of protection	Management intent
High ecological value (HEV) waters	The measures for the indicators for all Environmental Values are maintained i.e. maintain water quality objectives (target values) for HEV waters.
Slightly disturbed waters	The measures for the slightly modified physical or chemical indicators are progressively improved to achieve the water quality objectives (target values) for HEV waters.
Moderately disturbed waters	If the measures for indicators of the Environmental Values achieve the water quality objectives (target values) for the water—the measures for the indicators are maintained at levels that achieve the water quality objectives (target values) for the water, or; If the measures for indicators of the Environmental Values do not achieve the water quality objectives (target values) for the water—the measures for indicators of the Environmental Values are improved to achieve the water quality objectives (target values) for the water.
Highly disturbed waters	The measures for the indicators of all Environmental Values are progressively improved to achieve the water quality objectives (target values) for the water.

Appendix D2: Supporting information on water quality management in Queensland

In addition to the measures recommended for accreditation under the WQM Plan and the management responses recognised in the HWMP, there are other factors that contribute to minimising water quality impacts in the plan area. In Queensland, the *Water Supply (Safety and Reliability) Act 2008* (Qld) applies to all drinking water service providers. In general, this includes all councils or businesses involved in treating, transmitting or reticulating water for drinking purposes. Each provider is required to have a drinking water quality management plan in place, and comply with the details of the plan. Drinking water service providers are responsible for providing a safe and reliable water supply, and to rectify any problems that may occur. Health guideline values specified in the Australian Drinking Water Guidelines apply to drinking water service providers.[83] Note that in the Warrego-Paroo-Nebine Water Resource Plan area, all drinking water is provided from the Great Artesian Basin, which is not a Basin water resource.

The amended Resource Operations Plan for the Warrego, Paroo, Bulloo and Nebine plan area provides rules that protect waterholes which also contribute to the maintenance of water quality in important refugial aquatic habitats. The Queensland *Water Act 2000* (Qld)/Water Regulation 2002 manage impacts on watercourses, lakes and springs as a result of works involving the excavation and placement of fill. Best practice principles are recommended for adoption when conducting these works in order to prevent streambed and bank erosion and impacts to the riparian zone.

The clearing of native vegetation in Queensland is regulated by the *Vegetation Management Act 1999* (Qld), the *Sustainable Planning Act 2009* (Qld) and associated policies and codes. This includes the regulation of clearing in water and drainage lines. The HWMP for Warrego, Paroo, Bulloo and Nebine basins sets targets to maintain and, where possible, improve forested and non-forested riparian vegetation and groundcover.

Under the *Environmental Protection Act 1994* (Qld), a person must not carry out any activity that causes, or is likely to cause, environmental harm unless the person takes all reasonable and practicable measures to prevent or minimise the harm (the general environmental duty). It is also unlawful to deposit a prescribed water contaminant listed in the Environmental Protection Regulation 2008 to Queensland waters.

[83] Refer to the Queensland Department of Energy and Water Supply website for further information.

Appendix E: Relationships between monitoring of water resources, and reporting under section 13.14

Basin Plan Schedule 12 – Matter to be reported on by Basin States	Monitoring of the water resources of the water resource plan area that will be done to enable the Basin State to fulfil its reporting obligations under section 13.14
8. The achievement of environmental outcomes at an asset scale	Queensland has had regard to the Schedule 12 Reporting Guidelines for reporting against Matter 8, as suggested under the Basin Plan s.13.16. Queensland considers that monitoring of the condition of asset scale indicators provides important contextual information for the review of planned environmental watering arrangements. Queensland currently undertakes its Q-Catchments aquatic ecosystem condition and trend monitoring in different catchments on an irregular basis depending on state-wide priorities. Any relevant data from this program will complement monitoring programs undertaken by the Commonwealth and other states and contribute to Schedule 12 reporting. Queensland notes that as of January 2016, the Monitoring and Evaluation Working Group is examining how monitoring and research conducted by the Murray-Darling Basin Authority and Basin States can best be synthesised to contribute to consistent evaluation of progress towards Basin Plan outcomes at both Basin and asset scale. Hydrologic and ecological assumptions underpinning planned environmental watering arrangements for priority environmental assets identified in the Long-Term Watering Plan and Queensland WRP are periodically assessed and updated as required based on the updated hydrological and ecological knowledge. This assessment, which is required under s.53 and 54 of the *Water Act 2000* (Qld) occurs at least every five years, and must be informed by the best available scientific information. Any relevant information resulting from this assessment will be considered for inclusion in Schedule 12 reporting.
9. The identification of environmental water and the monitoring of its use	The volume of water available as HEW is estimated using IQQM hydrological models. The model used to determine annual water available as HEW is extended annually to include climatic and flow data (DNRM streamflow gauges) for the previous water year. The part of the PEW that is reported on under Matter 9 of Schedule 12 of the Basin Plan is provided by flow event management rules triggered under s30(3)(a) of the ROP. This is estimated using data from DNRM streamflow gauges.
12. Progress towards the water quality targets in Chapter 9	Section 69 of the ROP requires the Resource Operations Licence holder to notify the Department of Natural Resources and Mines of any blue-green algal events in the Cunnamulla Water Supply Scheme, including the details of the event and any response undertaken.
19. Compliance with water resource plans	Section 52 of the ROP requires the chief executive to measure or collect information on the following water monitoring indicators. (a) water quantity; (b) water taken; (c) nominal volume of water permanently traded and seasonally assigned;

Basin Plan Schedule 12 – Matter to be reported on by Basin States	Monitoring of the water resources of the water resource plan area that will be done to enable the Basin State to fulfil its reporting obligations under section 13.14
	(d) the number of permanent trades and seasonal assignments; and (e) pricing information about water that has been permanently traded. Section 53 of the ROP requires the chief executive to collect and record information on the natural ecosystems monitoring indicators for ecological assets that are linked to the ecological outcomes of the Queensland WRP.. Sections 61, 62, 63, 64 and 65 of the ROP require the resource operations licence holder to monitor the following indicators: • Stream flow and storage height data • Releases from Allan Tannock Weir • Stock and domestic releases from Allan Tannock Weir • Announced allocations • Water taken by water users Section 68 of the ROP requires the resource operations licence holder to report on these matters in the annual report.
All other matters in Schedule 12 on which Basin States are required to report (s13.14)	To the extent that monitoring undertaken for another matter in this table is relevant to fulfilling a reporting obligation in relation to any other matter in Schedule 12 (including another matter listed in this table), that monitoring may also be used by Queensland to enable it to fulfil its reporting obligations in relation to that other matters.

Appendix F: Significant sources of information used to prepare this Water Resource Plan

Significant source of information	Comments – why it is 'best available information'.
Environmental assessments Environmental assessments provide information on the effectiveness of the Queensland WRP 2003 strategies and ROP rules as well as making recommendations for the development of the new WRP and ROP. They are produced by the Department of Science, Information Technology and Innovation (DSITI, formerly DSITIA), drawing upon ecological monitoring data and eco-hydraulic models. These assessments include: - Environmental assessment report – Stage 1[84] - Environmental risk assessment for selected ecological assets[85] - Environmental assessment report – Stage 2[86]	The environmental assessments for the current WRP and ROP were peer-reviewed by Professor Martin Thoms, an internationally recognised scientist specialising in riverine ecosystems at the University of New England. For the findings of this review, and DSITIA's response, see DSITIA (2013)[87].
Groundwater background papers The groundwater background papers provide information on the groundwater resources in the plan area, including their geology, condition, entitlement holdings and management arrangements. These papers cover the following aquifers: Sediments above the Great Artesian Basin[88], St George Alluvium[89], and Warrego Alluvium[90]	These papers were produced by Department of Natural Resources and Mines (DNRM) bringing together the available scientific information together with data from DNRM's Water Management System and groundwater database. They represent the most comprehensive source of information on these aquifers.
Cultural assessment and Aboriginal values and uses report The cultural assessments were conducted in consultation with local Aboriginal people in collaboration with key Aboriginal representative groups such as NBAN,	These reports identify the importance of water to Aboriginal people, and the issues around Aboriginal involvement in water planning. They bring together the inputs from

[84] Department of Science, Information Technology, Innovation and the Arts (DSITIA) (2013b), *Review of Water Resource (Warrego, Paroo, Bulloo and Nebine) Plan 2003: Environmental assessment report – Stage 1,* State of Queensland, October 2013.
[85] DSITIA (2013c), *Review of Water Resource (Warrego, Paroo, Bulloo and Nebine) Plan 2003 and Resource Operations Plan: Environmental risk assessment for selected ecological assets*, State of Queensland, October 2013.
[86] DSITIA (2013a), *Review of Water Resource (Warrego, Paroo, Bulloo, and Nebine) Plan 2003 and Resource Operations Plan: Environmental assessment report – Stage 2*, State of Queensland, October 2013.
[87] DSITIA (2013d), *Review of Water Resource (Warrego, Paroo, Bulloo and Nebine) Plan 2003 and Resource Operations Plan: Response to independent science review*, State of Queensland, October 2013.
[88] Department of Natural Resources and Mines (DNRM) (2016a), *Sediments above the Great Artesian Basin: Groundwater background paper*, State of Queensland, February 2016.
[89] DNRM (2016b), *St George Alluvium: Groundwater background paper*, State of Queensland, February 2016.
[90] DNRM (2016c), *Warrego Alluvium: Groundwater background paper*, State of Queensland, February 2016.

Significant source of information	Comments – why it is 'best available information'.
South West NRM Group and the Far South West Aboriginal NRM. These reports articulate the values and uses of water important to Aboriginal people. In addition to consultation findings, the assessments draw upon existing sources of information such as the MDBA's *A yarn on the river: Getting Aboriginal voices into the Basin Plan*, and the Cultural Heritage Map of Queensland. There are two cultural assessments that were used to inform the WRP: the cultural assessment report[91], and a report on Aboriginal values and uses[92].	local Aboriginal people in the most recent consultation, together with existing information. In consulting with Aboriginal people, Queensland was guided by key Aboriginal groups, particularly NBAN, as well as best practice guidelines and principles on Aboriginal engagement as referenced in the Aboriginal values and uses report.
Socio-economic assessment[93] The socio-economic assessment reviews existing literature and data from the Australian Bureau of Statistics, CSIRO, MDBA and DNRM to establish a socio-economic profile for the area and analyse future demographic trends.	The assessment was prepared by DNRM using the most recent census data and reports from government agencies and scientific organisations.
Risk assessments These reports detail the process and outcomes of the risk assessment conducted for the plan area that meet both the requirements of the current WRP review and of the Basin Plan. These assessments include: - Risk assessment of insufficient water available for the environment[94] - Risk assessment of insufficient water available for surface water and groundwater users[95] - Healthy Waters Management Plan[96]	These reports are based on the risk management policy of DNRM and AS/NZS ISO 31000:2009 Risk Management – Principles and Guidelines). They are also consistent with the NWI Policy Guidelines for Water Planning and Management Risk Assessment Module developed by the Department of Sustainability, Environment, Water, Population and Communities.
Implementation Review Report[97]	This report was prepared by DNRM and is the only available report which assesses the previous plan against its social, economic and environmental outcomes.

[91] DNRM (2014b), *Warrego, Paroo, Bulloo and Nebine water resource plan and resource operations plan: Cultural assessment*, State of Queensland, April 2014.
[92] DNRM (2016e), *Warrego, Paroo, Bulloo and Nebine water resource plan and resource operations plan: Aboriginal values and uses*, State of Queensland, January 2016.
[93] DNRM (2014d), *Review of Warrego, Paroo, Bulloo and Nebine water resource and resource operations plans: Socioeconomic assessment*, State of Queensland, April 2014.
[94] DNRM (2016h), *Warrego, Paroo, Bulloo and Nebine Water Resource Plan Review: Risk assessment of insufficient water available for the environment*, State of Queensland, February 2016.
[95] Department of Natural Resources and Mines (2016g), *Warrego, Paroo, Bulloo and Nebine Water Resource Plan Review: Risk assessment of insufficient water available for surface water and groundwater users*, State of Queensland, February 2016.
[96] Department of Environment and Heritage Protection (2016a), Warrego, Paroo, Bulloo and Nebine Basins: Healthy Waters Management Plan, South West NRM Ltd and State of Queensland, February 2016.
[97] DNRM (2013a), *Implementation Review Report: Warrego, Paroo, Bulloo and Nebine Water Resource Plan and Resource Operations Plan*, State of Queensland, November 2013.

Significant source of information	Comments – why it is 'best available information'.
This report brings together the findings of the environmental assessments, as well as socio-economic and cultural assessments, risk assessments and consultation with key stakeholders, to assess how well the previous plan was achieving its outcomes, and to inform the development of the new plan. It was prepared by DNRM and is publicly available.	
Consultation Report[98] The consultation report describes the consultation process for the draft WRP and ROP, key outcomes of the consultation and how key issues have been addressed.	This report was produced by DNRM and contains the most recent record of consultation undertaken in the development of the new WRP and ROP.

[98] DNRM (2016d), *Warrego, Paroo, Bulloo and Nebine water resource plan and amended resource operations plan: Consultation report*, State of Queensland, February 2016.

Appendix G: Significant methods used to develop water resource plan

Significant methods	Comments – why it is the best available method
IQQM hydrological models The IQQM computer program was developed by the Department of Land and Water Conservation in New South Wales, and is owned and managed by the Queensland Department of Science, Information Technology and Innovation. IQQM is used to model take from watercourses by supplemented and unsupplemented water allocations, and water licences. The IQQM version used for the original WRP and ROP was updated and now includes data from the period from 1889 to 2011. For this WRP, the period from 1895 to 2009 was used. Version 6.75.34 of the IQQM program was used for the development of the new IQQM. The primary models used are the BDL models WAR1601A (Warrego River), PAR1601A (Paroo Creek), and NEB1601A (Nebine Creek). The relevant reports are: - Scenario modelling reports for the Warrego[99], Paroo[100] and Nebine[101] catchments - Calibration reports for the Warrego, Paroo and Nebine catchments. These are currently being finalised and will be available upon request to DNRM from March 2016.	This model has been reviewed by the MDBA during the development of the Water Resource Plan. It is the same model provided to the MDBA when developing the Basin Plan and BDLs. This model was previously accredited by the Murray-Darling Basin Commission. Queensland has liaised with the MDBA in improving the model for this WRP.
Water Accounting Methods Paper[102] This paper details Queensland's water use accounting methodologies for the current WRP area. Information has been sourced from a number of Queensland government databases relating to entitlement and water use data. There are also a number of other sources of information that are described in the paper, including consultancy reports used to obtain estimates of take.	This paper brings together the different methodologies used to estimate actual and permitted take for the different forms of take. It has been developed specifically to support this plan.
Environmental assessments Please see discussion under environmental assessments located in Appendix B Technical Assessments of the Overview Report [103]	
Risk assessments Please see discussion under risk assessments located in Appendix B Technical Assessments of the Overview Report	

[99] Department of Science, Information Technology and Innovation (2016a), *Warrego River: Warrego River Model Results to Support Basin Plan Requirements*, State of Queensland, February 2016.

[100] DSITI (2016b), *Paroo Creek: Paroo Creek Model Results to Support Basin Plan Requirements*, State of Queensland, February 2016.

[101] DSITI (2016c), *Nebine Creek: Nebine Creek Model Results to Support Basin Plan Requirements*, State of Queensland, February 2016.

[102] DNRM (2016c), *Water Accounting Methods Report for Warrego-Paroo-Nebine Water Resource Plan*, State of Queensland, February 2016

[103] DNRM (2014a) *Warrego, Paroo, Bulloo and Nebine draft water resource plan and amended resource operations plan Overview report* September 2014

Appendix H: Overview of Queensland's measures in response to extreme events

The *Water Act 2000* (Qld) and its subordinate instruments and tools provide different types of response to water supply emergencies in Queensland.

Note that in the WRP plan area, all town water supplies for critical human water needs are sourced from the Great Artesian Basin which is not a Basin water resource. It is therefore unlikely that a Basin water resource will be subject to regulation for a water supply emergency for an extreme dry period.

Type 1

Water sharing rules in the relevant resource operations plan (ROP) and administered by the chief executive of the Department of Natural Resources and Mines (DNRM):

- **Announced allocations** - For supplemented water allocations, water sharing rules are in place whereby the water available for access is stated as a percentage of the allocation volume announced at particular times throughout the year. An announcement of 100 per cent would indicate that there are no water supply issues.

- **Priority** - Supplemented water allocations may be further specified in terms of their priority group. A high priority water allocation (e.g. an entitlement used for town water supply) has a higher level of reliability and has an announced allocation of 100 per cent when the announced allocation for medium priority water allocations (agriculture) is greater than zero per cent. An announced allocation of less than 100 per cent for medium priority water allocations may indicate the beginning of a water supply issue (or dry period) where medium priority allocations must be reduced due to limited water availability.

- **Critical water sharing arrangements** – In this situation high priority water allocations are reduced below 100 per cent. Medium priority allocations would be at zero per cent. Such arrangements may be incorporated into announced allocation formulas, are separate formulas or may be situated outside of the ROP. This situation may indicate a dry to extreme dry period. Sometimes restrictions imposed by local government may come into force when storages reach particular levels.

- **Unsupplemented water allocation with flow conditions subject to an announced period** – Unsupplemented water allocations that rely on flood flows and flows supplementary to those released from infrastructure can only access water in accordance with announcements made by the DNRM. These announcements are based on flows measured at gauging stations.[104] Take of water by these allocations would indicate that there are no water supply issues.

[104] The water allocations owned by the Commonwealth Environmental Water Holder (CEWH) in the Warrego-Paroo-Nebine WRP area are classified as this type of entitlement. The CEWH allocations are treated the same as all other water allocations and as such have a level of reliability applied to them. This reliability cannot be impacted by future water management decisions. The entitlements are also subject to the same water sharing rules (or access rules) as other water allocations. Any impacts of extreme dry periods on the CEWH allocations (determined through assessments and incorporation of new scientific information) would also impact on all other water allocations. Any Qld WRP amendments or review to cater for water allocation re-assessment of reliability is catered for under the *Water Act 2000*.

- **Unsupplemented water allocations with flow conditions not subject to an announced period** – These entitlements have a flow condition and can take water when the flow condition is met in accordance with any other conditions on the entitlement. The inability to take water by these water allocations may indicate a dry period through to an extreme dry period.

Arrangements outside of the ROP:

- ***Water Act 2000*** **(Qld) section 25 restrictions** — Limiting water taken under water licence, permit, allocation or under S 20C(3) (constructing authority taking water for constructing or maintaining infrastructure). This section applies when there is a shortage of water and the chief executive of the DNRM publishes a notice advising that there is a restriction.

- **Water management areas as prescribed in the Water Regulation 2002** —These water sharing rules apply mostly to groundwater licences in water management areas. The chief executive of the department decides an announced entitlement for the water licence. The announced entitlement is a percentage of the nominal entitlement of a water licence that may be taken in a water year. Announcements are made in consideration of trends in water levels, long term average sustainable use, and historical water use, and anticipated water use, water available to supplemented water licences in the area and weather conditions including forecasts. An announcement of 100% would indicate that there are no water supply issues. Announcements heading towards 0% could represent dry to extreme dry periods.

Type 2

Water Act 2000 **(Qld) Sections 25A – 25ZE**

These sections apply during water supply emergencies. A water supply emergency is defined as a situation in which there is a demonstrably serious risk that the State's or part of the State's essential water supply needs will not be met. Emergencies are declared by the Minister.

Whilst responsibility and accountability for managing available water supplies is spread among service providers and water storage owners, there is a need in extreme circumstances for the State to be involved in solving water supply shortages and ensure continuity of supply for essential water supply needs.

This emergency power will be a necessary last resort measure to deal specifically with a water supply emergency. The existing measures already in place will mean this power should not need to be used often.

Examples of such emergencies include:

- Failure of a large part of water supply, treatment or distribution infrastructure or wastewater infrastructure

- Extended severe drought conditions

- Contamination of a water storage used for essential water supply needs causing the water to be unfit for supply.

A water supply emergency declaration:

- Overrides a ROP, resource operations licence and an interim resource operations licence. A water supply emergency declaration takes effect when approved by governor-in-council and the approved declaration is published in the Queensland Government gazette. A declaration will generally be effective for 15 business days from approval unless a regulation dealing with the matters stated in the declaration commences prior to the expiry of that period.

- Sets out the measures (including restrictions) to be carried out and outcomes that a water service provider is to achieve. Also sets out provisions relating to costs and compliance.

A water supply emergency regulation*:*

- Also overrides a ROP, resource operations licence and an interim resource operations licence.

- A regulation must be made if the Minister requires a service provider to carry out measures different to that permitted under a water supply emergency declaration under section 25C; or the measures or outcomes required to address the emergency will need to be in place for longer than 15 business days, being the length of time of a water supply emergency declaration.

- A regulation may further specify changes to water infrastructure or construction of new