46–51 – Schedule 3A of the Water Act 2007 (Cwth) sets out the Commonwealth’s riskassignment framework in line with paragraphs 48–51 of the NWI.

The Basin plan sets out the allocation of risks for reductions in the availability of water for consumptive use arising from Basin Plan implementation.

This includes specifying the Commonwealth’s share of the risks of any reductions to the consumptive pool arising from changes in government policy and new knowledge (where the Basin state or territory has applied the risk-sharing arrangements in accordance with the NWI).

One hundred per cent of the reduction to water that may be taken for consumptive use is assigned to changes in Australian Government policy.

52–54 – The Water Act 2007 (Cwth) requires the Minister and the MDBA to have regard to social, cultural, Indigenous and other public benefit issues when developing the Basin plan.

The MDBA has established two independent organisations, the Murray Lower Darling River Indigenous Nations (MLDRIN) and the Northern Basin Aboriginal Nations (NBAN), to advise on Indigenous issues in the MDB.

The Basin plan requires jurisdictional water resource plans to identify objectives in consultation with relevant Indigenous organisations.

Plans must also be prepared having regard to the views of Indigenous people on cultural flows.

Water resource plans must consider native title rights and claims, Indigenous Land Use Agreements, Indigenous heritage, and risks to the protection of Indigenous values and uses arising from the use and management of water.

Indigenous representation in the preparation and implementation of the plan is required.

In assessing a water resource plan for accreditation the MDBA will consult with MLDRIN and NBAN.

The National Cultural Flows Research Project, funded by the Australian Government, is developing an evidence base to help secure a future where Indigenous water allocations are embedded in Australia’s water planning and management framework.

The project is managed by the National Native Title Council and due for completion in 2016.

It will define Indigenous cultural values and water needs and measure the cultural, social and ecological benefits of watering trials.

Governments have agreed through a COAG committee to develop a new module for the NWI Policy Guidelines for Water Planning and Management to assist water planners improve engagement of Indigenous people in water planning and management.

This module is intended to be provided for approval in late 2014.

55–57 – The Water Act 2007 (Cwth) requires the MDBA to have regard to interception activities when developing the Basin plan.

The Basin plan requires water resource plans to manage interception and details how interception is to be included in water resource plans, which are to be developed and implemented by 2019.

The Commission engaged Barma Water Resources to conduct a synthesis and analysis of methods for quantifying the impacts of interception activities in Australia.

The report, Synthesis and analysis of methods for quantifying the impact of interception activities in Australia (2013), investigated the various quantification models and methods, their accuracy, resourcing requirements and impediments to using them.

The MDBA undertook a project on the technical robustness and accuracy of methods used to estimate interception take and how they could be improved. Interception estimates were calculated and used to establish Basin plan SDLs.

**Water markets and trading**

59 – The Commonwealth, together with the state and territory governments, worked on the development of a National Water Market System (NWMS).

The project was coordinated by the Commonwealth Department of the Environment and overseen by a project group involving jurisdictional representatives and the Bureau of Meteorology (BoM).

The Commission was an observer.

The objective of the NWMS was to strengthen Australia’s water market through the development and implementation of a common registry system for all states except Victoria, where complementing enhancements were proposed to be made to its register.

The project was funded by the Commonwealth and had three elements:

1. development of the NWMS
2. development of high-performance state and territory water registers (Common Registry Solution (CRS))
3. data transfer between water registers (interoperability).

The project began in 2009 with an intended delivery date of 2012, however it experienced delays and was not completed.

A CRS design was finalised but not assessed or built. The project has now been cancelled, and it is unclear how the completed or partially completed components will be used.

60 – The Commonwealth is working in collaboration with jurisdictions to remove remaining institutional barriers to trade.

See comments against NWI paragraph 60 in other jurisdiction tables for details of individual jurisdiction progress.

In accordance with the *Water Act 2007* (Cwth), the Basin plan includes water trading rules.

Before making these trading rules the MDBA was required to obtain and have regard to the advice of the Australian Competition and Consumer Commission (ACCC).

The Basin plan water trading rules are not intended to duplicate or replace state or territory water trading rules, but rather to ensure consistent operation of the water markets through the Murray–Darling Basin.

The water trading rules apply to individuals who buy and sell water and irrigation infrastructure operators within the Basin.

The rules commenced on 1 July 2014 and will be enforced by the MDBA.

See also NWI paragraph 59 for further information.

63 – Under the 2013 Intergovernmental Agreement on Implementing Water Reform in the Murray–Darling Basin (signed initially by South Australia, Victoria and the Australian Capital Territory in 2013, and then by New South Wales and Queensland in February 2014), governments reaffirmed their continuing commitment to remove restrictions on trade in water in accordance with Basin plan requirements and clause 4(16) of Schedule 3 to the Water Act 2007 (Cwth), and committed to not introduce any measures that inhibited the Commonwealth’s ability to ‘bridge the gap’.

The Commission has coordinated a number of reviews and evaluations of the effectiveness of the Australian water market.

For example, 63 (vi) is specifically addressed by the Commission’s Impacts of trade reports, and 63 (vii) is considered to have been satisfied by the 2009 Biennial Assessment.

The Commission published Water markets in Australia: a short history in December 2011, Understanding the Victorian decision to suspend intervalley water allocation trading 2010–11 in November 2011, Strengthening Australia’s water markets in June 2011 and Current issues influencing Australian water markets in 2013.

**Best practice water pricing and institutional arrangements**

65 – The NWI pricing principles were endorsed by the Natural Resource Management (NRMMC) on 23 April 2010.

The 2008–11 COAG Work Program on Water included a commitment to review the pricing principles, which was reaffirmed in the National Water Reform Work Plan 2013–17.

The Commonwealth is undertaking this review with input from jurisdictions.

The review aims to assess the usefulness of the pricing principles in providing guidance to jurisdictions on implementing bestpractice water pricing arrangements for urban and rural water services, as set out in paragraphs 64 to 67 of the NWI.

The review will consider whether the pricing principles meet the intent of the NWI best-practice water pricing arrangements, taking into account changes since the pricing principles were developed. It may make findings and recommendations on pricing issues that are currently outside the scope of NWI pricing principles, such as sewerage pricing and multiple customer tariff options for urban water services.

66 – The 2010 NWI pricing principles address metropolitan and rural water pricing including the movement towards upper-bound pricing, cost recovery for rural systems, and recycled water and stormwater.

Within the MDB, the Australian Government has made the Water Charge (Infrastructure) Rules 2010, which came into effect on 12 January 2011.

The rules were developed with wide public consultation and advice from the ACCC.

National Guidelines for Residential Customers’ Water Accounts were endorsed at the 11th meeting of the NRMMC and released on 24 November 2006 by Australian Government, state and territory water ministers.

The ACCC has regulatory responsibility for the rules and provides guidance material to assist infrastructure operators, irrigators and Basin state governments and agencies to understand and comply with the rules.

67 – The 2010 NWI pricing principles set out the commitment to recover water management and planning charges on a cost-effectiveness and transparent basis. The pricing principles are currently under review.

68 – The Water Charge (Planning and Management Information) Rules 2010, made under the Water Act 2007 (Cwth), seek to improve the availability of information about water planning and water management activities funded by government and apply in the Murray–Darling Basin.

Government entities responsible for determining water planning and management charges have published information on the charges since July 2011.

Information about the arrangements outside the Basin in regard to water charge rules was not provided.

69 – The Commonwealth has developed and published frameworks and criteria for the assessment of funding applications to various infrastructure programs.

The Sustainable Rural Water Use and Infrastructure Program (SRWUIP) invests in rural water use, management and efficiency projects.

Project proposals are assessed in accordance with Schedule E of the 2008 Intergovernmental Agreement on Murray–Darling Basin Reform and a National Irrigation Efficiency Stakeholder Reference Panel has been appointed to provide a consultation forum on investments.

Program guidelines require costeffectiveness, value for money, economic, environmental, and technical and other criteria to be satisfied.

Business cases for large programs funded through SRWUIP are assessed against criteria that include economic and ecological sustainability.

Other programs funded through SRWUIP, such as the OnFarm Irrigation Efficiency Program, are assessed on a competitive grants model basis against merit criteria outlined in the program guidelines to ensure the best applications are selected for funding.

70–72 – COAG has endorsed the Next Steps in National Water Reform: Preparation for the future (a report by the Standing Council on Environment and Water), outlining the National Water Reform Work Plan 2013–2017 as the next stage in the Australian water reform agenda.

Action 6 in this work plan commits all jurisdictions to developing a national framework for guiding decisions on water resource development proposals by 2017.

73 – In 2011 the Australian Government stated it had commissioned studies into market mechanisms to address environmental externalities. The outcomes of this study were not provided.

The management of environmental externalities in the Murray–Darling Basin is being addressed through the Basin plan.

75 – The Commission undertakes annual National Performance Reports for all urban and rural water service providers over a particular size across Australia.

At the time of writing the future of reporting is uncertain.

76 – The National Performance Reports provide a nationally consistent framework for the public reporting of performance benchmarking for water service providers.

77 – Under the Water Act 2007 (Cwth) and the Competition and Consumer Act 2010 (Cwth) (the CC Act), the ACCC has six independent functions in relation to water:

1. enforce water market rules and water charge rules under the Water Act 2007 (Cwth)
2. enforce the CC Act with water brokers, exchanges and irrigation infrastructure operators
3. monitor and report on regulated charges and compliance with water market and water charge rules
4. determine regulated charges
5. provide advice to the Commonwealth Minister responsible for water on the development of water market rules and water charge rules
6. advise the MDBA on the development of water trading rules.

At present the ACCC independently determines the regulated charges imposed within the Murray–Darling Basin by the State Water Corporation of NSW.

The ACCC has also accredited the Essential Services Commission of Victoria to determine the regulated charges of infrastructure operators in Victoria.

Under the Water Act 2007 (Cwth), the ACCC’s role does not relate to urban water supplies, or water resources outside the Basin.

79 (i) a) – See NWI paragraph 35 for further detail.

79 (i) b) – The Commonwealth, in conjunction with relevant jurisdictions, has established institutional and management arrangements to ensure the achievement of environmental and other public benefit outcomes for shared resources, including the:

1. Intergovernmental Agreement on Murray–Darling Basin Reform 2008
2. Intergovernmental Agreement on Implementing Water Reform in the Murray–Darling Basin 2013
3. Murray–Darling Basin Agreement 2008
4. Lake Eyre Basin Intergovernmental Agreement Act 2001
5. Great Artesian Basin Sustainability Initiative
6. NWI 2004.

The Murray–Darling Basin Plan Implementation Agreement (2013) made between the MDBA, Basin state governments and the CEWH (under section 1.12 of the Basin plan) establishes the Basin Plan Implementation Committee, an inter-jurisdictional high-level forum to monitor, review and make decisions relevant to implementing the plan.

Several subsidiary working groups have been established including water resource planning and environmental water.

The Environmental Water Holders and River Operators Forum, jointly hosted by the MDBA and the Commonwealth Environmental Water Office (CEWO), is held at the start of each water year to support operational coordination of environmental water delivery in the southern-connected Murray–Darling Basin.

The CEWO undertakes its annual planning in consultation and cooperation with the MDBA (as the delegate for TLM and the river operator for the River Murray), state government agencies, catchment environmental water advisory groups and landholders.

The delivery of Commonwealth environmental water is coordinated with and undertaken (in the main) by state government agency delivery partners.

CEWO staff also participate in environmental watering operational advisory groups as necessary.

79 (i) c) – The Basin plan requires water resource plans to be prepared having regard to the need for rules to ensure that environmental water requirements are not compromised; that is, baseflows where there is a significant connection between surface and groundwater resources.

79 (i) d) – The progress of water buybacks under the Commonwealth’s Restoring the Balance program is reported online, and outcomes from tenders are regularly updated.

Information about total water recovery progress towards environmental water requirements in the Basin plan is also reported online.

The *Water Act 2007* (Cwth) requires that the Commonwealth Water Minister be given various reports each financial year on the management of Commonwealth environmental water including:

1. a report on the achievement of the objectives and priorities of the Water for the Environment Special Account (to enhance the environmental outcomes that can be achieved by the Basin plan by protecting and restoring environmental assets and protecting biodiversity dependent on the Basin water resources)
2. a report on the CEWH’s operations during that year, which must include, among other matters, achievements against the objectives of the environmental watering plan.

The Basin plan requires the CEWH to provide the MDBA with a report by 31 October each year (beginning in 2014) on the previous water year, which includes the identification of environmental water and the monitoring of its use, the implementation of the environmental management framework and a statement of reasons why any environmental watering has been undertaken that is not in accordance with the Basin annual environmental watering priorities.

Every five years, the CEWH must also report to the MDBA on the achievement of environmental outcomes at a Basin scale, by reference to the targets in Schedule 7 of the Basin plan.

The first report is due by October 2017.

To support these reporting requirements, the CEWH is establishing a long-term monitoring program to monitor the response to Commonwealth environmental water at a number of locations across the Basin between 2014–15 and 2018–19.

Information published on the CEWO website includes:

1. volumes of Commonwealth environmental water in each catchment (including both entitlement quantities, reliability and security and annual allocations and carryover)
2. annual water use options plans
3. decisions to use environmental water
4. all monitoring reports
5. the Commonwealth environmental water annual report and outcomes report

79 (i) e) – The *Water Act 2007* (Cwth) provides for the CEWO to trade allocations or entitlements under certain conditions.

It provides for the CEWH to enter into contracts or other arrangements in relation to the taking or use of water under rights or interests that form part of the holding.

79 (i) f) – The Australian Government has committed $200 million through the Water for the Environment Special Account to remove priority constraints that currently limit the volume of environmental water that can be efficiently conveyed through rivers.

The CEWH is also working with relevant jurisdictions to investigate the opportunities to establish water shepherding and return flow arrangements to support the efficient and effective use of environmental water.

79 (ii) – Water recovery options to ‘bridge the gap’ to the SDLs in the Basin plan have considered all available options, including investment in more efficient infrastructure, the purchase of water on the markets and improved management of practices such as measurement through the non-urban water metering framework. See also comments against NWI paragraph 97.

**Water resource accounting**

81 – The *Water Act 2007* (Cwth) assigns BoM the role of compiling and maintaining water accounts for Australia, including a set of water accounts to be known as the National Water Account.

The Director of Meteorology is required to publish this National Water Account annually in a form readily accessible by the public.

Four accounts have been published: in 2010 and 2011 for the Murray–Darling Basin, Adelaide, Canberra, Melbourne, Ord, Perth, South East Queensland and Sydney, with the addition of Daly for the 2012 and 2013 accounts.

The Australian Bureau of Statistics (ABS) produces the Water Account Australia, which uses different collection methods and reports by jurisdiction.

82 – The Commonwealth through the BoM Water Accounting Standards Board worked with other NWI parties to develop the Australian Water Accounting Standard 1 (ED-AWAS 1): Preparation and Presentation of General Purpose Water Accounting Reports, which has been used to produce the BoM’s National Water Accounts to date.

The Australian Water Accounting Standard 2: Assurance Engagements on General Purpose Water Accounting Reports was released in 2014.

83 – The Basin plan requires water resource plans to be prepared having regard to the management and use of any water resources which have a significant hydrological connection to those within the plan area.

The plan must also set out a method for determining annual permitted take that accounts for significant hydrological connections.

85 (i) Development of standards for environmental water accounting began in 2011 through the national water accounting activities under the direction of the BoM and the Water Accounting Standards Board (see NWI paragraph 81 above).

The standards are still under development and no national standard for the reporting of environmental water is in place.

The Commission released the *Australian environmental water management: 2012 review* that provides an update on the 2010 overview of environmental watering arrangements around Australia.

The *Water Act 2007* (Cwth) requires the MDBA to annually identify and account for all held environmental water.

85 (ii) The CEWH has developed an internal Environmental Watering Management System to manage its portfolio of water assets.

The accounting and management system includes information on the present register of holdings and water trades and tracks environmental watering actions. The system will be used to record watering decisions and link to and report on watering at icon sites.

See also NWI paragraph 79 (i) d) for further information.

86 – BoM has a role to develop standards for and collect, store, manage, interpret and report information under s.120 (a) of the Water Act 2007 (Cwth).

The Water Information Standards Business Forum is a national committee chaired by BoM to coordinate and foster development of water information standards and guidelines in Australia.

Its membership comprises more than 25 industry organisations. BoM is working through the forum to develop National Industry Guidelines for water quality metadata, groundwater monitoring and water data quality. Information on the status of these guidelines was not provided.

87–88 – COAG agreed to a National Framework for Non-Urban Water Metering in December 2009, with a 10year implementation period.

Commonwealth progress to date has included the development of new metering standards (ATS 4747), funding the accreditation and upgrading of two meter test facilities and the development of a national implementation plan.

89 – The Commonwealth through the BoM Water Accounting Standards Board worked with other NWI parties to develop the ED-AWAS 1: Preparation and Presentation of General Purpose Water Accounting Reports, which was used to produce the BoM’s National Water Accounts to date.

The development of AWAS 2 is now underway.

The Water Act 2007 (Cwth) establishes a range of obligations relating to the Basin plan’s provisions and water resource plans (Part 2) and provision of information to the MDBA.

The Commission produced the Australian Water Markets Report covering a summary of trading activity and an overview of water markets across Australia. See also NWI paragraphs 81 and 85.

91 (i) The Water Efficiency Labelling and Standards (WELS) scheme is a joint initiative of the Commonwealth, state, and territory governments. The Commonwealth provides the legal framework for the scheme and the states and territories have enacted complementary legislation.

An independent review of the scheme was conducted in 2010 which found it had saved more water than originally anticipated, but had issues including governance and the level and source of funding. Changes implemented following the review include more flexible registration arrangements and improved cost recovery.

More than 21,000 products are currently registered in the scheme.

91 (ii) The Smart Approved WaterMark is a not-for-profit organisation established by four associations: the Australian Water Association, Irrigation Australia, the Nursery and Garden Industry, Australia and the Water Services Association of Australia.

It is overseen by a steering committee with representation from the Australian and state and territory governments, water utilities, the four governing associations, and the chair of the Technical Expert Panel (an independent panel which assesses applications to the scheme).

The Commonwealth supported the scheme with a grant from the Water Smart Australia program administered by the Department of the Environment.

The project provided a simple identification label which is applied to water efficient outdoor products to assist consumers to make informed choices.

91 (iii) – (iv) not relevant to the Commonwealth.

92 – The 2009 national guide Evaluating Options for Water Sensitive Urban Design was developed jointly by the Australian and state and territory governments to support the evaluation of options for water sensitive urban developments.

The CRC for Water Sensitive Cities works with more than 70 research, industry and government partners to find better ways to use and reuse Australia’s water resources.

The CRC is developing tools and resources to improve urban planning and design and construction processes, as well as wastewater management.

For an update on progress see <watersensitivecities.org.au>.

The National Water Quality Management Strategy is supported by the Australian, state and territory governments and implemented through relevant legislation and policies.

It includes a range of guiding documents to improve water quality and reduce pollution including drinking water, groundwater, fresh and marine water, recreation, primary industries and recycled water. Several guidelines were developed to guide the management of health and environmental risks associated with recycled water and stormwater.

The concept of a national validation framework for water treatment technologies to reduce the regulatory burden on recycled scheme proponents has been investigated by the Australian Water Recycling Centre of Excellence, funded by the Australian Government. This has received in-principle support from jurisdictions through the Water Quality Policy Sub-Group.

The centre is exploring arrangements to introduce a validation framework.

The Commonwealth has provided funding of $680 million through the National Urban Water and Desalination Plan to urban water infrastructure and research, improving the security of water supplies in Australia’s larger cities. Project activities comprise stormwater harvesting and reuse, including managed aquifer recharge, water recycling and desalination.

95 – Criticism of the MDBA’s consultation process for the *Guide to the Basin Plan* led to an increase in engagement during the Basin plan’s development.

The MDBA consulted across jurisdictions and the community by way of community, roundtable and technical meetings with community leaders and key stakeholder groups.

During the 20-week consultation period on the proposed Basin plan, the MDBA held about 175 meetings with a broad range of stakeholders and received more than 11,000 submissions on the draft plan.

The MDBA also travelled to 30 towns and Aboriginal communities across the Basin to talk with Aboriginal people about the proposed plan and record their submissions.

Since November 2012 when the Basin plan was made, the MDBA has held more than 100 community meetings throughout the Murray–Darling Basin to provide an overview of the plan and its implementation, as well as targeted meetings of a more technical nature.

In developing the Constraints Management Strategy (CMS) through 2013, the MDBA undertook extensive consultation with jurisdictions and communities.

Community consultation concentrated on areas identified as key focus areas (geographic locations adjacent to key constraints).

This included nine meetings with communities specifically addressing the CMS, and a further six meetings to provide updates on Basin plan implementation.

The MDBA released a draft CMS for public comment in October 2013 to seek further input from stakeholders on addressing the types of constraints to the delivery of environmental water worthy of examination in the coming years.

The CMS was finalised in November 2013.

The Basin plan’s environmental watering plan sets out consultation requirements for the development of the Basin‑wide environmental watering strategy, long-term watering plans for each water resource and annual environmental watering priorities, which include environmental water holders and managers, river operators, local communities, and persons materially affected by the management of environmental water.

96 – Information about total water recovery progress towards environmental water requirements in the Basin plan is reported on the Department of the Environment’s website.

MDBA reporting includes:

1. the Basin Salinity Management Strategy annual implementation reports to the Murray–Darling Basin Ministerial Council
2. the River Murray Water Quality Monitoring Program, which measures water quality in the Murray and its tributaries, establishing baseline and series data so that environmental outcomes can be measured, monitored and reported
3. TLM environmental monitoring program, which provides information on the responses to environmental watering and the environmental condition of the icon sites and River Murray system (see the MDBA’s Knowledge and Information Directory for access).

Under the Water Act 2007 (Cwth), BoM is responsible for producing regular reports on the status of Australia’s water resources and how they are used. See NWI paragraphs 81, 86 and 89 for further information on BoM’s role.

In June 2014 the Department of the Environment released the Water Recovery Strategy for the Murray–Darling Basin, following public consultation on a draft strategy released in November 2012.

The strategy outlines the Australian Government’s progress and proposed approach for future environmental water recovery in the Basin.

97 – The Basin plan requires that recovery of additional water under the SDL adjustment mechanism must avoid detrimental impacts to communities.

The Australian Government has committed to ‘bridge the gap’ to the new SDLs in the Basin plan.

Both water purchasing and infrastructure investment are being used to this end, including the Commonwealth’s $3.1 billion Restoring the Balance program.

The Australian Government is working with Basin jurisdictions on a package of constraint, supply and efficiency measures for ministers to consider by mid-2016.

The SDL adjustment mechanism allows the Basin plan recovery target to be reduced by up to 650 GL without diminishing environmental outcomes in ways that entail a neutral or beneficial socio‑economic impact (such as environmental works and measures).

The Commonwealth has committed $5.8 billion to the Sustainable Rural Water Use and Infrastructure Program, which is investing in rural water use, management and farm irrigation efficiency. At least 600 GL per year on average over the long-term is expected to contribute to ‘bridging the gap’, with $3.2 billion provided for state priority projects.

See also responses to this NWI paragraph for other jurisdictions for further Commonwealthfunded adjustment programs.

101 – In November 2008, COAG agreed to the development of a National Water Knowledge and Research Platform to establish priority research themes and ensure a coordinated research effort.

The COAG National Water Knowledge and Research Strategy was released in 2012.

The high-level objective of the platform is to develop a targeted water research and knowledge platform so that key decisions on water policy, management and use in Australia can be based on best-available and continuously improving knowledge and information.

Focal groups, comprised of representatives from each jurisdiction, are working to implement the platform’s research themes.

The Raising National Water Standards (RNWS) program was a $250 million Australian Government initiative that supported projects to advance NWI reforms by improving water management, capacity, knowledge, skills and innovation. The program supported 178 projects over the period June 2006 to June 2012.

Administered by the Commission, program funds were directed at activities across three strategic investment areas:

1. advancing implementation of the NWI
2. improving integrated water management across Australia
3. improving knowledge and understanding of our water resources.

An independent evaluation noted that the substantial pool of technical knowledge and information created from projects will serve future research and development, water planning and management well.

The *National Atlas of Groundwater Dependent Ecosystems* was one project funded through the RNWS program.

The atlas presents the current knowledge of groundwater-dependent ecosystems across Australia and displays ecological and hydrogeological information on known groundwater-dependent ecosystems and ecosystems that potentially use groundwater.

The atlas is a tool to assist the consideration of ecosystem groundwater requirements in natural resource management, including water planning and environmental impact assessment.

Subject to licensing arrangements, data and analysis produced through these programs will be made publicly available through an information portal.

The CEWH has produced a long-term framework for the prioritisation of environmental water allocations.

The framework includes ecological objectives that will change under different water availability scenarios (extreme dry, dry, moderate, wet, very wet).

The CEWH has also developed broad criteria on the ecological outcomes sought from proposed watering actions and criteria to assess the ecological significance of assets to be the subject of potential watering actions.

The National Partnership Agreement on Coal Seam Gas and Large Coal Mining Development (NPA) was established in 2012 between the Australian, Queensland, New South Wales and Victorian governments.

The objective of the NPA is to strengthen the regulation of coal seam gas (CSG) and large coal mining development by ensuring that future decisions are informed by substantially improved science and independent expert scientific advice.

The Commonwealth is strengthening the science underpinning regulatory decisions on the waterrelated impacts of CSG and large coal mining development through the Independent Expert Scientific Committee on Coal Seam Gas and Large Mining Development (established in 2012) which provides advice to Commonwealth and state regulators, and by funding bioregional assessments and other research.

Bioregional assessments will be undertaken in up to 15 subregions within New South Wales, Queensland, South Australia and Victoria.

Four subregions have been selected as a time priority: Galilee, Gloucester, Namoi and Clarence‑Moreton. Bioregional assessments are science-based studies that will develop detailed, multilayered records of the ecology, hydrology, geology and hydrogeology in a particular geographic region.

They will provide baseline information and an assessment of the cumulative impacts of CSG and large coal mining developments on water-related assets.

Research projects will address key knowledge gaps in the consideration of water-related impacts from CSG and coal mining.

The priority areas of research are hydrology, ecology, chemicals and cumulative impacts.

The research includes a project which is assessing the risks to human and environmental health from chemicals used in drilling and hydraulic fracturing in CSG extraction in Australia.

**204 New South Wales**

**Water access entitlements and planning framework**

26 – At the commencement of the NWI, New South Wales’s remaining commitments to address overallocated systems under the 1994 COAG Water Reform Framework included water sharing plans (WSPs) for 31 surface water systems and six for inland groundwater sources.

New South Wales has completed all water plans identified under the COAG framework.

Around 98 per cent of water extracted in New South Wales is now covered by WSPs.

The 31 WSPs identified at the commencement of the NWI are due to expire in 2014.

Independent reviews of the WSPs were conducted by the Natural Resources Commission (NRC) and New South Wales Office of Water (NOW), which provided their final reports to the New South Wales Minister for Primary Industries in mid2013.

The Minister has determined that the 31 WSPs due to expire in 2014 must be replaced before July 2015.

See NWI paragraph 39 for more detail.

For unregulated areas or groundwater systems where there is less intensive use, New South Wales has been developing ‘macro’ WSPs.

These plans are designed to cover most of the remaining water extracted in New South Wales.

A number of the plans that cover single-catchment unregulated river water sources and groundwater aquifers are being merged into the larger macro WSP for that area, as the first plans start to expire and are due for replacement/extension.

27 – New South Wales has implemented NWI-consistent legislation.

28–33 – The *Water Management Act 2000* (NSW) provides the statutory basis for NWIconsistent water access entitlements in NSW.

Water access entitlements are defined and implemented through WSPs.

34 – Section 60I of the *Water Management Act 2000* (NSW) requires any activity, including mining and unconventional gas operations, in WSP areas to hold a licence for any water taken regardless of its quality unless an exemption applies.

An exemption for less than 3 ML of water extracted yearly during the exploration phase is in the Water Management (General) Regulation 2011.

The *Water Act 1912* (NSW) applies to water sources outside of WSP areas and also requires operations to hold a water licence.

If unassigned water is provided for in a water plan, then an aquifer access licence may be acquired by auction, tender, or other means under section 65 of the *Water Management Act 2000* (NSW).

The *Water Act 1912* (NSW) applies to water sources outside of water planning areas.

35 – As per the last assessment, licensed environmental water in NSW has the same level of security as water access licences for consumptive purposes.

The New South Wales Department of Planning and Environment manages both environmental water allowances (established under WSPs) and New South Wales Environmental Water Holdings.

The Department of Planning and Environment also delivers environmental water held by the Commonwealth Environmental Water Office and non‑government organisations. The Department of Planning and Environment activity is focused in five valleys where there are significant wetlands along with substantial environmental water allocations and New South Wales Environmental Water Holdings.

NOW is responsible for managing access to water and ensuring water is shared between the environment, towns and cities, farmers and industry, and Aboriginal cultural and community development activities.

Where licensed environmental water has been purchased from the consumptive pool, the security of supply remains the same as under the consumptive licence from which it was purchased.

For rulesbased environmental water, the security may be higher than consumptive water depending on the rules in the individual WSPs.

In the New South Wales portion of the Murray–Darling Basin, however, environmental water is less secure at times of extremely low water availability (as with the other Basin states).

The 2008 Intergovernmental Agreement on Murray–Darling Basin Reform states that Critical Human Water Needs (CHWN) are the highestpriority water use for communities dependent on the water of the Murray–Darling Basin.

Hence during periods of ‘extremely low water availability’, where there is an extreme risk of not being able to supply water for CHWN in the next 12 months, Tier 3 water sharing is triggered and the Ministerial Council must intervene to ensure the supply of conveyance water and the delivery of CHWN. In these conditions, no priority would be given to environmental water.

The Water Management Act 2000 (NSW) provides for planned and adaptive environmental water.

Only adaptive environmental water, which is granted under a water allocation licence for specific environmental purposes, can be traded or converted to a consumptive use by the Minister.

39 – New South Wales has implemented a water planning process that is NWI consistent.

New South Wales prioritises the development of WSPs to those water resources that are most intensely used and developed.

The 31 WSPs identified at the commencement of the NWI are now nearing the end of their 10year term.

The 10year assessment process is complete and audit reports on the implementation activities of the WSPs have recently been published by NOW (2004–09, 2009–12).

The NRC also reviewed each plan in relation to its contribution to the natural resource management statewide standards and targets, and NOW evaluated each plan’s appropriateness, efficiency and effectiveness.

The NRC and NOW delivered their reports to the Minister for Primary Industries in mid2013 and the reports are available online.

The plans are to be replaced before July 2015. See NWI paragraph 26 for more detail.

For coastal plans, changes will be made to ensure consistency with the current legislative framework and the inclusion of post-2004 policy initiatives.

Additional changes will also be considered.

Changes to inland plans during this replacement will be limited, in anticipation of further changes required under the Basin plan by 2019.

As part of plan replacement, changes will be made to ensure consistency with the current legislative framework and the inclusion of post-2004 policy initiatives.

In most cases, no change to the intent of the WSP rules is proposed.

40 (i) – The Water Management Act 2000 (NSW) provides for the monitoring and evaluation of WSPs via fiveyearly audits that focus on implementation, and a 10-year review which considers the extent to which a WSP has contributed to the relevant state standards and targets, as well as the plan’s effectiveness, efficiency and appropriateness.

40 (ii) – Monitoring of water flow and level is undertaken regularly and used to update and improve the hydrological models that provide the basis for available water determinations under each plan.

Data collection is based on an extensive network of surface water level and flow stations and groundwater monitoring bores, together with models for the regulated rivers and major aquifers.

In comparison, knowledge of the hydrology and water extraction in unregulated systems is limited.

NOW uses the macro WSP risk-assessment approach in unregulated rivers as a tool for prioritisation of management actions and for the stratification of monitoring effort.

New and revised WSPs include provisions to change the plan rules should new information become available.

In some of these WSPs there is explicit recognition of specific studies being undertaken, which may alter the WSP in the future (e.g. inland major alluvial groundwater systems).

Funded through the Australian Government’s ‘Closing the Gap’ strategy, NSW has committed to the Aboriginal Water Initiative to support monitoring and evaluation of the commercial, cultural and environmental outcomes for Aboriginal people from water planning.

40 (iii) – NOW has prepared *Environmental flow response and socio-economic monitoring* reports for water sharing areas in New South Wales.

These contain updates on the monitoring and evaluation activities undertaken in the previous water year to assess the ecological and socio-economic performance of WSPs.

NOW prepares progress reports that summarise key implementation activities and water management under WSPs.

Progress reports have been prepared for those plans that commenced in 2004, and for those covering the major inland alluvial groundwater sources.

The reports are available on the NOW website with the last report published in 2011.

The Department of Planning and Environment, as environmental water holder in New South Wales, provides annual reporting on environmental water management performance, including both planned and adaptive environmental water.

All relevant New South Wales agencies report on performance of water management and planning activities in their annual reports.

41 – See actions against NWI paragraph 26 for detail on progress.

43–44 – Within high-competition systems in the MDB major water recovery pathways have generally been facilitated by mechanisms outside of WSPs, for example New South Wales and Australian Government investment through the Water for the Future programs (including for off-farm works, on-farm irrigation efficiency and environmental works and measures), and through the RiverBank program (for voluntary entitlement purchases for environmental purposes).

State priority projects have also been agreed in-principle under the 2008 Intergovernmental Agreement on Murray–Darling Basin Reform, including the NSW Private Irrigation Infrastructure Operators Program (led by the Commonwealth).

New South Wales signed the intergovernmental agreement regarding the Basin plan’s Sustainable Diversion Limits (SDLs) on 27 February 2014.

SDLs are required to take effect by 1 July 2019, aiming to assist progress in adjusting overallocated and overused systems.

The Australian Government has committed to ‘bridge the gap’ to the SDLs in the Basin plan to avoid affecting individuals’ water entitlements by the recovery of water for the environment.

There are several high-competition groundwater systems where overuse has been identified and progress has been made in establishing pathways that implement water recovery mechanisms through WSPs (e.g. Upper and Lower Namoi, Lower Macquarie, Lower Lachlan, Lower Murray, Lower Gwydir and Lower Murrumbidgee).

These mechanisms include the reduction of entitlements over a 10-year period supported by the $135 million joint NSW and Australian Government program, Achieving Sustainable Groundwater Entitlements, which offers financial assistance to eligible licence holders to help them adjust to the changes.

The Hawkesbury-Nepean River Recovery project, jointly funded by the Australian and New South Wales governments, is a package of efficiency projects and Commonwealth water purchases to reduce entitlements and provide water to the environment.

A range of urban water supply augmentation measures are included in the Sydney metropolitan water plan to ensure that water use does not exceed the identified sustainable extraction limits due to future urban growth.

These measures include desalination, recycling, groundwater, transfers from the Shoalhaven, accessing of deep water in storages, stormwater harvesting and improved water efficiency.

Adjustment issues for groundwater systems continue to be addressed in the development of groundwater WSPs via compensation payments to entitlement holders through the Achieving Sustainable Groundwater Entitlements program.

45 – All New South Wales systems previously recognised as overallocated are currently being managed through WSPs that include pathways to manage extraction within limits. See actions associated with NWI paragraph 97 for more detail.

46–51 – For areas outside of the Murray–Darling Basin, New South Wales legislated for the NWI riskassignment framework to apply from 2014.

For areas of New South Wales within the Murray–Darling Basin, the Commonwealth risksharing framework will apply to WSPs that expire after the Basin plan takes effect.

52 (i) Indigenous representation on water advisory committees is mandatory under the *Water Management Act 2000* (NSW).

An Interagency Regional Panel is used to support development of macro WSPs.

An Aboriginal Water Initiative (AWI) was established in June 2012 to improve Indigenous involvement in water planning and management within New South Wales. Its main objectives are to ensure ongoing and effective statewide and regional engagement with Indigenous communities in WSPs and to achieve and report on measurable Indigenous water outcomes for both environmental and commercial use.

NOW uses the information provided by AWI staff to provide Indigenous information related to water management to the Interagency Regional Panel for consideration in the development of WSPs.

52 (ii) Two types of Indigenous Specific Purpose licences are available under the *Water Management Act 2000* (NSW): cultural access licences for uses such as manufacturing traditional artefacts, hunting, fishing, gathering, recreation and ceremonial purposes and licences for drinking, food preparation, washing and watering domestic gardens. All WSPs in New South Wales allow Indigenous communities to apply for both types of licence.

Community development licences are also available under WSPs to support commercial enterprises owned by Indigenous people in coastal unregulated water or groundwater areas.

Cultural access licences, active for the life of the cultural purpose, are capped at 10 ML per year per application and cannot be traded.

There are two cultural access licences in New South Wales.

The *Water Sharing Plan for the Barwon-Darling Unregulated and Alluvial Water Sources 2012* also allows supplementary (Aboriginal environmental) water access licences to be granted to Indigenous people or communities in the Barwon-Darling unregulated river water source.

These access licences allow Indigenous people and communities to extract water to fill lagoons and billabongs to improve or restore their cultural and environmental value.

53 – Under the *Water Management Act 2000* (NSW) a native title holder is entitled, without the need for an access licence, water supply work approval or water use approval, to take and use water in the exercise of native title rights.

Most water plans have no allocation for Indigenous people or native title.

Two New South Wales WSPs have provided an entitlement for native title.

Under these plans native title rights’ security is equal to or less than human domestic and pastoral stock use.

55–57 – The New South Wales water management planning process identifies priority interception activities. The priorities identified have largely been regulated through statewide policies.

Stock and domestic bores require a water supply works approval under the *Water Management Act 2000* (NSW) and use should conform to the Reasonable Use Guidelines for Stock and Domestic Water.

Farm dams are a significant issue in peri-urban areas. These are regulated by the Farm Dams Policy 1999 (NSW) under the *Water Management Act 2000* (NSW).

This restricts the volume of dam storage which can be developed to the property’s harvestable right, based on 10 per cent of the rainfall run-off.

Plantation forestry water use has been estimated as part of preparing WSPs in MDB areas in NSW.

The *Plantation and Reafforestation Act 1999* (NSW) (plantations greater than 30 ha) regulates interception associated with plantations.

Licences for water extraction are not required for plantation forestry in New South Wales.

Mining and coal seam gas (CSG) have been recognised as potentially significant interception activities and are regulated through the Aquifer Interference Policy (2012).

The policy covers the potential impact of activities that interact with groundwater resources such as mining.

The policy applies across the state and clarifies water licence and impact assessment requirements for aquifer interference activities.

Water taken by aquifer interference activities must be licensed and accounted for in accordance with the water sharing arrangements. Proponents are required to establish the baseline condition of resource; strategy for complying with water access rules; details of potential risks to water level, quality or pressure drawdown impacts on nearby third parties; details of potential to cause enhanced hydraulic connectivity between aquifers; and details of the method for disposal of co-produced water through an environmental impact statement (EIS).

Decisions on water allocation take into account the available water within a WSP and potential impacts identified through the EIS process.

Under the New South Wales Aquifer Interference Policy (2012), NOW uses the assessment criteria ‘minimal impact considerations’ to assess aquifer interference projects and determine their potential impacts on water resources.

This assessment includes a consideration of potential impacts on connected systems, waterdependent assets and groundwater-dependent culturally significant sites.

Both impacts of individual activities and cumulative impacts are considered.

An additional ‘gateway process’ is applied to significant development applications for mining or CSG extraction on strategic agricultural land (defined in the relevant Strategic Regional Land Use Plan).

This process involves an independent panel of experts examining individual projects to ensure they satisfy specified criteria on their agricultural and aquifer impacts.

The project may then be certified to proceed to the development application stage or be issued with a conditional certificate containing a list of requirements to address potential agricultural and/or aquifer impacts.

See NWI paragraph 34 for more detail.

New South Wales completed a Floodplain Harvesting Policy in 2013 to manage the capture and use of overland flows.

Under the policy, floodplain harvesting licences are issued with similar characteristics to water licences.

These enable licence holders to access compensation rights under the *Water Management Act 2000* (NSW), carryover and trading (once methods for monitoring and accounting of floodplain harvesting extractions are in place).

The policy notes that ‘existing WSPs will be amended to set the floodplain harvesting longterm average annual extraction limit, establish rules for the management of floodplain harvesting, and provide that floodplain harvesting access licences will be exercised in accordance with those rules.

For new plans, these actions will be taken as necessary at the time the plan is made’.

**Water markets and trading**

59 – The *Water Management Act 2000* (NSW) requires information on water trading to be made publicly available to promote informed and efficient water markets and improve administrative transparency.

New South Wales has a number of registers that provide publicly accessible water information online. These include:

1. the *Water Access Licence Register*, which is a statutory register for title of ownership of water access entitlements and encumbrances on those licences.

This register is managed by the Land and Property Management Authority and is publicly available, including online

1. the *Environmental Water Register*, which provides information for water users and the general public on the types of environmental water held
2. a range of other registers managed by NOW that provide information on allocation trade, status of applications for water approvals, the approvals, water access licence conditions, available water determinations and water access licence statistics.

60 – New South Wales has implemented compatible institutional and regulatory arrangements that facilitate intra and interstate trade.

Ministerial decisions to suspend a WSP are instated if the Minister is satisfied there is a severe water shortage in relation to a particular water management area or water source.

The Water Sharing Plan for the Wybong Creek Water Source (Wybong Creek WSP), which commenced in 2004, was suspended two years later and remains suspended.

The initial rules for the WSP were based on a ceasetopump at the 95th percentile of days of flow at the end of the water source.

New South Wales advises that the contemporary geomorphology of the catchment is such that most low flows are subsurface at the lower end of the system, but flows are reliable from the lower system to near the headwaters.

As a result, the original cease-to-pump rules were triggered not long after the WSP had commenced, and stayed in place in excess of 100 days.

In 2011 NOW reviewed the Wybong Creek WSP in consultation with the Hunter Interagency Regional Panel, in response to community concerns about the plan’s ceasetopump rules.

The Wybong water source is currently operating under the water sharing rules negotiated through this consultation period, and it is expected that new rules for the water source will be incorporated in the WSP for the Hunter Unregulated and Alluvial Water Sources.

The current review of WSPs will consider additional flexibility for management in regulated rivers during drought periods, although amended rules may not be finalised within the timeframe for replacement.

New South Wales suspended water allocation trade (temporary trade) from the NSW Murray and Lower Darling Rivers into South Australia from 1 April to 30 June 2012.

New South Wales advises that trade was suspended to protect third parties from potential impacts.

Under protocols to the Murray–Darling Basin Agreement, water traded from New South Wales to South Australia from 1 April each year is to be held over in the New South Wales share of storage and delivered the following year.

If the storage refills over this period, the traded water would continue to occupy space in the New South Wales storage, and therefore limit the amount of water that could be captured for allocation to New South Wales water users.

In January 2013, New South Wales announced a 10-year, three per cent per valley limit on further buybacks of New South Wales water licences for environmental purposes in the MDB.

As a result of the Commonwealth agreeing to limit buybacks to 1500 GL across the Murray–Darling Basin, the order was repealed on 24 February 2014.

The commencement of a WSP gives effect to the licensing provisions of the *Water Management Act 2000* (NSW), which means licences under the *Water Act 1912* (NSW) (attached to land) are converted to *Water Management Act 2000* (NSW) water access licences and water supply works and use approvals.

The water access licences are separated from land, perpetual and fully tradeable, subject to rules defined in relevant WSPs.

New South Wales continues to pursue opportunities to deal with inefficient infrastructure or unsustainable irrigation schemes.

63 (i) – The Basin states have collaborated on interstate water trading issues such as exchange rate trading and tagged trade.

The tagged trade method has been adopted to facilitate interstate entitlement trading.

63 (ii) – A number of recent ad hoc barriers to trade have occurred including:

1. In 2009, allocation trading out of the New South Wales Murrumbidgee was suspended to prevent possible third‑party impacts caused by potentially high trade volumes during drought.
2. In 2011, allocation trading from New South Wales into the Victorian Murray was suspended to prevent impacts on the rights of other entitlement holders.
3. During one week in March 2012, interstate allocation trading between New South Wales, Victoria and South Australia was suspended.
4. On the 15 January 2013, the NSW Government announced an immediate 10-year, three per cent per valley limit to apply on further buybacks of NSW water licences for environmental purposes in the MDB.

This limit was lifted on the 24 February 2014.

The Commission’s *Current issues influencing water markets in Australia* (2013) report states that the series of ad hoc allocation trading suspensions reduced confidence in the market, prevented trades by some water users (including irrigators) and hindered their water management decisions.

With regard to the three per cent limit on buybacks for environmental purposes, the report notes that although not yet reached, the limit constitutes a departure from commitments to remove impediments to trading in order to promote more open and efficient water markets.

63 (iii), (iv), (v) (vi), (vii) – The Commission has coordinated a number of reviews and evaluations on the effectiveness of the Australian water market.

For example, 63 (vi) is specifically addressed by the Commission’s 2007 and 2010 *Impacts of trade* reports; 63 (vii) is considered to have been satisfied by the 2009 Biennial Assessment.

**Best practice water pricing and institutional arrangements**

65 (i) – New South Wales has implemented consumption-based pricing in both rural and urban systems.

65 (ii)–(iii) – See actions associated with NWI paragraph 66.

66 (i) – See NWI paragraph 66 (v).

66 (ii) – Urban water supply and sewerage services are provided by 101 regional urban water utilities (mostly local governments).

These utilities are required to undertake strategic planning and to set their prices for recycled water and stormwater in accordance with the requirements of the New South Wales Government’s Best-Practice Management of Water Supply and Sewerage Framework (2014), which is based on the Best-Practice Management of Water Supply and Sewerage Guidelines, 2007.

66 (iii) – The Liquid Trade Waste Regulation Guidelines (2009) – a subset of the NSW Best-Practice Management Framework (2013) – set the framework for the regulation of sewerage and trade waste in New South Wales.

The guidelines require compliance with a number of measures, including full cost recovery with an appropriate sewer usage charge, trade waste fees and charges and a trade waste regulation policy.

The guidelines also require a noncompliance trade waste usage charge and non-compliance excess mass charges to provide a strong financial incentive for each discharger to comply consistently with the conditions of their approval.

66 (iv) – National Guidelines for Residential Customers’ Water Accounts were endorsed at the 11th meeting of the Natural Resource Management Ministerial Council (NRMMC) and released on 24 November 2006 by Australian Government, state and territory water ministers.

66 (v) – For the utilities regulated by the Independent Pricing and Regulatory Tribunal of NSW (IPART):

1. there is a return on capital expenditure
2. capital expenditure undertaken since the legacy date is depreciated annually and its depreciated value increased in line with inflation each year contributed assets are not included.

For the other utilities in regional New South Wales, each utility is required to achieve at least lowerbound pricing on the basis of MEERA (Modern Engineering Equivalent Replacement Asset) asset valuation and current replacement cost depreciation.

Utilities which have met the requirements of the NSW Best-Practice Management Framework (2013) are encouraged to pay a dividend from the surplus of their water supply or sewerage businesses to the Council’s general revenue.

Such dividend payments would move the utility towards upper-bound pricing.

In New South Wales, 98 per cent of regional utilities are achieving full cost recovery for water supply on the basis of lower-bound pricing, and 97 per cent of utilities are achieving full cost recovery for sewerage.

67 – In New South Wales, charges for water planning and management activities are set on a cost recovery and transparent basis.

IPART sets three categories of fees and charges, one being the ‘water management charge’.

This charge recovers the cost of NOW’s resource management activities, predominantly undertaken to manage the impacts of water extraction.

Charges are linked to water planning and management activities and are transparent and independently reviewed.

The costs of undertaking each water planning and management activity are shared between licensed water users and government on an impactor pays basis.

Charges are set for each water system (valley and water source) based on the water user’s share of water planning and management costs for each system.

Consequently, charges are linked closely to the costs of activities concerned.

Transition to full cost recovery for water planning and management activities was nearing completion by the end of IPART’s 2010 determination in 2013–14. Actual cost recovery for water planning and management for all water sources in 2009–10 was 88 per cent.

68 – The proportion of costs attributed to water users for each water management activity is specified on NOW’s website.

Under the Water Act 2007 (Cwth), the Australian Competition and Consumer Commission has responsibility for reporting on, monitoring and publishing information on charges (but not setting charges) for water planning and management services in the Murray–Darling Basin. This includes NOW’s water management services that fall within the Basin.

69 – For regional urban water supply and sewerage systems in New South Wales, all proposed capital and recurrent investments in a utility’s total asset management plan are required to be soundly based and affordable (as per the NSW Water and Sewerage Strategic Business Plan Guidelines 2011).

In non-metropolitan New South Wales, the New South Wales Government’s 2007 Best Practice Management of Water Supply and Sewerage Guidelines require the development and implementation of a 30-year Integrated Water Cycle Management (IWCM) strategy by each water utility.

Water utilities are required to evaluate each scenario in a utility’s 30-year IWCM strategy on a triple bottom line basis.

This involves identifying the scenario that provides the best value for money after taking account of the social, environmental and economic considerations, which enables the utility to make informed investment decisions for new water supply, sewerage and stormwater infrastructure and activities.

Under the New South Wales Government’s Metropolitan Water Plan for Greater Sydney (MWP) and the new Lower Hunter Water Plan, investment in new or refurbished water infrastructure is subject to hydrological and economic assessment, taking account of financial, social and environment factors.

For example, as part of the review of the 2010 MWP, an assessment is being undertaken into the potential modification of Warragamba Dam to allow the release of new variable environmental flows into the Hawkesbury-Nepean River.

This includes ecological and economic modelling and analysis.

70–72 – Controlled allocation orders can be made where there is unassigned water in a process under section 65 of the Water Management Act 2000 (NSW).

A controlled allocation process can involve an auction, tender or other process specified in the order.

The New South Wales Minister for Primary Industries made a controlled allocation order for 20 groundwater sources on 31 May 2013.

The order allowed up to five per cent of the unassigned water to be released in these groundwater sources so that new or expanding enterprises could obtain new water entitlements.

These aquifer access licences were acquired through a tender process run by NOW.

73 – New South Wales manages environmental externalities through a range of regulatory measures, including water extraction limits specified under WSPs, WSP rules, mandatory water access licence rules and the environmental protection licensing regime.

Environmental externalities are included in the environmental approvals provided to the water utilities in New South Wales and the costs of addressing environmental requirements are included in each utility’s service provision costs, which are recovered from the users of the services.

Costs incurred by major water utilities to meet regulatory measures are passed on through IPART determinations.

Where water providers are required to invest in major infrastructure, the WSPs give the water provider sufficient time to seek cost recovery and to construct infrastructure.

The prices charged by the major metropolitan water utilities are determined by IPART through a transparent pricing process.

This takes into account the efficient costs incurred by the utilities in addressing environmental matters in their planning and operations.

75 – New South Wales has provided benchmarking information and data for the National Performance Reports for 32 urban water service providers and four rural water service providers.

At the time of writing the future of reporting is uncertain.

76 – Costs for preparation of National Performance Reporting are considered to be overheads in New South Wales State Water’s cost structure for rural reporting entities, so they are incorporated into the ‘operating expenditure’ used by IPART for pricing determinations.

NOW included the costs related to Commonwealth water reform actions (including water consumption reporting and compliance with national standards) in its submission to the IPART review of bulk water pricing.

While these were costed at 57 FTE, most were subsequently rejected by IPART on the basis that they were not appropriate to be considered for bulk water pricing.

The IPART 2010 determination for NOW’s water planning and management charges rejected proposals for cost recovery relating to the national water reforms.

Each New South Wales urban water utility meets the cost of reporting in the National Performance Report, including the cost of obtaining an independent audit of the data provided.

77 (i) – In New South Wales, IPART determines prices for the metropolitan utilities, bulk water services provided by State Water, Sydney Catchment Authority, Sydney Desalination Plant Pty Ltd, and water planning and management charges.

This includes price-setting policy and processes for government water service providers.

Under the New South Wales Water Industry and Competition Act 2006, private entities licensed to provide water and wastewater services can be price regulated by IPART if the Minister declares the services to be a monopoly.

To date the Sydney Desalination Plant Pty Ltd is the only utility licensed under the Water Industry and Competition Act 2006 (NSW) subject to price regulation by IPART.

77 (ii) – Through its pricing determinations, and related submissions, IPART ensures that water pricing by New South Wales Government water service providers and private water service providers is reported.

Non-declared water utility reporting is coordinated through NOW.

The 101 New South Wales regional urban water utilities are required to undertake long-term planning and to price their services in accordance with the NSW Best- Practice Management of Water Supply and Sewerage Framework (2014).

NOW independently reviews each utility’s strategic business plan.

**Integrated management of environmental water**

79 (i) a) – The *Water Management Act 2000* (NSW) and the *Water Act 1912* (NSW) provides the statutory framework for the environmental water in New South Wales.

These arrangements give NOW and the Department of Planning and Environment responsibility for the management of environmental water.

The Department of Planning and Environment is responsible for the delivery of discretionary water (planned environmental water allocations and water access licences held by the New South Wales Government for an environmental purpose), while NOW is responsible for the implementation of WSPs including the implementation of non-discretionary rulesbased environmental water.

79 (i) b) – New South Wales has established management and institutional arrangements to ensure achievement of environmental and other public benefit outcomes for shared resources with other jurisdictions, including:

1. the New South Wales–Queensland Border Rivers Intergovernmental Agreement 2008
2. the Intergovernmental Agreement on Murray–Darling Basin Reform 2008
3. the *Water (Commonwealth Powers) Act 2008* (NSW), which refers NSW state powers to the Commonwealth in order to implement the Basin-focused *Water Act 2007* (Cwth), the Snowy Water Inquiry Outcomes Implementation Deed, the Snowy Water Licence, the Snowy Scheme Long Term Arrangements Deed, and the Snowy Bilateral Deed
4. Memorandum of understanding with the Commonwealth on environmental water (2009)
5. Memorandum of understanding between NSW and the Commonwealth on water shepherding (2010)
6. Intergovernmental Agreement for the Paroo River between New South Wales and Queensland 2003
7. Heads of Agreement – the agreed outcome from the Snowy water inquiry.

79 (i) c) – In New South Wales, surface water and groundwater are defined in the *Water Management Act 2000* (NSW).

Provisions for the integrated management of surface water and groundwater resources vary between WSPs.

In general integrated plans are developed where connectivity is high.

Where lower connectivity is assessed, separate surface water and groundwater plans are put in place, but provision is made in each plan to address connectivity.

More recent macro water planning has placed greater emphasis on integrating surface water and groundwater management.

Based on the degree on connectivity, recent plans may include surface water and their associated alluvial aquifers, while other groundwater resources are managed by groundwaterspecific plans.

79 (i) d) – Managers of adaptive environmental water are not compelled under legislation or the WSPs to monitor and report on environmental watering outcomes; however, regular reports are published on the Department of Planning and Environment’s website.

The New South Wales Government’s *Environmental water use in NSW* annual report series provides an overview of the department’s environmental watering actions and their ecological outcomes, including water:

1. held under licences (adaptive environmental water)
2. held in prescribed allocations under WSPs
3. provided by the Commonwealth Environmental Water Office
4. provided through programs such as The Living Murray.

The Commission funded the development of the New South Wales River Condition Index (RCI) which allows the spatial reporting of long-term river health and helps integrate water allocation and catchment planning.

The RCI assists with WSP development, reporting on statewide targets for rivers, and catchment action plan evaluation and development by Local Land Services (formerly catchment management authorities).

The RCI is currently being updated to be consistent with the national approach for the identification of high ecological value aquatic ecosystems.

The New South Wales Department of Planning and Environment produces the Water for the Environment News, which outlines environmental releases, actions and outcomes for held environmental water.

New South Wales contributes to the annual Commonwealth Environmental Water Holder (CEWH) outcomes report which documents environmental outcomes where watering actions were implemented in the MDB.

79 (i) e) – Environmental water in New South Wales is provided for in WSPs as ‘planned’ environmental water and ‘adaptive’ environmental water.

Only adaptive environmental water can be traded.

See NWI paragraph 35 (iii) for more detail.

79 (i) f) – Water-dependent ecosystems are identified and described in assessments associated with the development of WSPs.

Objectives are fairly general, for example that the condition of all water-dependent ecosystems is to be maintained or recovered.

In more recent macro plans, risks to the water resources and dependent ecosystems associated with the current water regime are an explicit element.

Adaptive environmental water use plans and annual environmental watering plans set out outcomes that specifically identify ecosystems and attributes of ecosystems that are targeted, as well as risks.

Annual watering plans also identify key water-dependent assets and their condition and identify ecological objectives and watering priorities.

79 (ii) – New South Wales runs or participates in a diverse range of water recovery measures and initiatives including:

1. the NSW Murray–Darling Basin Environmental Works and Measures Feasibility Project
2. Cap and Pipe the Bores
3. The Living Murray
4. Snowy Initiative
5. Darling River Water Savings Project
6. Sustaining the Murray–Darling Basin
7. The Hawkesbury-Nepean River Recovery Program
8. Pipeline NSW
9. Wetland Recovery Program
10. Rivers Environmental Restoration Program.

Within the Murray–Darling Basin, NSW has stated that water recovery measures should focus on environmental works and measures, infrastructure and strategic purchases to manage the socio-economic impacts on rural communities.

81 – New South Wales has participated at the national level in the development of a range of national water accounting standards and reporting frameworks, including the General Purpose Water Accounting Reports and the Australian Water Accounting Standards (AWAS 1 and AWAS 2).

New South Wales uses AWAS 1 and the Water Accounting Conceptual Framework in providing data to the Bureau of Meteorology (BOM) for the general purpose water account.

82 – NOW has adopted AWAS 1 and is using it to produce its General Purpose Water Accounting Reports.

NOW published these reports online for all Murray–Darling Basin regulated river catchments within NSW for 2011–12 and 2012–13.

83 – NOW uses the *General Purpose Water Accounting Reports – Groundwater Methodologies* (2011) to include groundwater data in their General Purpose Water Accounting Reports.

New South Wales states that its reports published to date have all included some level of surface/groundwater interaction.

85 (i) – New South Wales has an Environmental Water Register in place.

See NWI paragraph 59 for more detail.

85 (ii) – In New South Wales, managers of adaptive environmental water are not compelled under legislation or WSPs to monitor and report on environmental water outcomes outside of the legislated 10year review of WSP objectives and the five-year audit of implementation of a WSP.

However, a range of regular reports are published by relevant agencies including:

1. the Environmental Water Register, which produces periodic reports on the assignment of water allocations to and from adaptive environmental water access licences and changes in the share component of adaptive environmental water access licences over time
2. environmental water use in *New South Wales Annual Report*, which reports on discretionary environmental water holdings, actions, events and outcomes
3. regular updates of environmental water holdings recovered through water recovery programs on the Department of Planning and Environment website.
4. general water plan audit and review reporting, which is the only formal arrangement for reporting on activity and compliance with the environmental water rules.

Detailed annual water accounting information on held environmental water (including entitlements, carryover, water availability and water trading) is made publicly available via NOW’s General Purpose Water Accounting Reports.

86 – New South Wales has continued to participate in nationally coordinated efforts in the development of national water accounting standards and reporting frameworks that facilitate data collection and storage at the national level.

87–88 – New South Wales contributed to the development of the Australian Government’s National Framework for Non-Urban Water Metering (2010).

NSW released its NSW metering implementation plan to guide implementation of the national framework in New South Wales in September 2013.

The New South Wales Metering Scheme is being funded by the Australian Government’s Water for the Future initiative, and implemented by the New South Wales State Water Corporation and NOW.

It includes updating and/or installing meters on all groundwater, regulated and unregulated rivers in the New South Wales Murray–Darling Basin. Two pilots are underway, with the installation of 1200 meters as part of the Murray Pilot Project, and 600 meters as part of the Murrumbidgee Computer Aided River Management (CARM) project.

89 – New South Wales has participated in the development of a range of national reporting requirements for water management.

New South Wales provides data and information for the production of the National Performance Reports for rural and urban water utilities, the Australian water markets (89 (ii)) and environmental water management report series (89 (iii)), and is working with other NWI parties on compliance and reporting arrangements for water metering (89 (i)).

New South Wales has also participated in the development of the National Water Market System, although this project has now been terminated.

91 (i) – The Water Efficiency Labelling and Standards (WELS) scheme is a joint initiative of the Australian Government and the state and territory governments. The *Water Efficiency Labelling and Standards Act 2005* (Cwth) provides the legal framework for the scheme.

New South Wales has enacted complementary legislation through the *Water Efficiency Labelling and Standards (New South Wales) Act* 2005.

91 (ii) – The Smart Approved WaterMark is a not-for-profit organisation established by four associations: the Australian Water Association, Irrigation Australia, the Nursery and Garden Industry, Australia and the Water Services Association of Australia.

It is overseen by a steering committee with representation from the Australian and state and territory governments, water utilities, the four governing associations, and the chair of the Technical Expert Panel (an independent panel which assesses applications to the scheme).

Project establishment was finalised in 2011 and a report on the delivery of the Smart Approved WaterMark was provided to the Department of the Environment.

The program continues to provide product efficiency ratings to consumers.

91 (iii) – Water supply in New South Wales is mostly managed by councils, with Sydney Water providing water and water services to residents of Sydney, Illawarra and the Blue Mountains.

For customers of Sydney Water, water wise rules were introduced in June 2009 after dam storage levels had remained steady at around 60 per cent for 12 months and drought restrictions were lifted.

Water wise rules replace water restrictions.

91 (iv) The Regional NSW Water Loss Management Program conducted by the New South Wales Local Government and Shires Association and the NSW Water Directorate has resulted in reductions in the average water losses for the 68 participating local water utilities from 154 to 92 litres/connection/day, or from 16 to 10 per cent of the potable water supplied – a total saving of 5500 ML/year.

Under its current operating licence, Sydney Water must ensure that the level of water leakage from its drinking water supply system (the water leakage level) does not exceed 105 ML/day.

When calculating the water leakage level each year, Sydney Water must use assumptions and methodology approved by IPART.

Under its operating licence, Hunter Water is required to submit a report to IPART on the economic level of leakage from its drinking water network.

92 – New South Wales has participated in national level working groups and committees to develop the Australian Guidelines for Water Recycling: Managing Health and Environmental Risks (2009) which address water quality guidelines for recycled and stormwater use.

Water sensitive urban design principles have been built in to land use planning guidelines in New South Wales, including through the Building Sustainability Index (BASIX) scheme of development assessment and the Draft Metropolitan Strategy for Sydney, released for community consultation in 2013. A range of guideline documents also deal with managing urban stormwater, including harvesting and reuse, and guidance for erosion and sediment control for a range of activities.

A BASIX five-year outcomes review and cost-benefit analysis showed there was scope to review the BASIX targets to achieve additional benefits.

The New South Wales Government is consulting with the community and stakeholders on new targets to reflect changes in construction design and new technology and align more closely with national building standards.

The review also includes new compliance measures aimed at reducing consumption of mainssupplied potable water and energy for heating, cooling and hot water.

In 2008, New South Wales held an independent inquiry that comprehensively reviewed institutional and regulatory models for non-metropolitan New South Wales, including the delivery and implementation of integrated water cycle management.

The recommendations were broadly supported for 30 regional water utilities by the 2012 Infrastructure NSW report.

The NSW Independent Local Government Review Panel examined urban water utilities in regional New South Wales, recommending retention of water supply and sewerage service provision by local government in its final report released in October 2013 for public comment.

The New South Wales Best-Practice Management of Water Supply and Sewerage Management Guidelines (2007) require each non-metropolitan utility to identify the most cost-effective demand management initiatives and to subsidise and promote at least two of these initiatives.

The Central Coast Water Savings Fund was established in partnership with the Gosford/Wyong Councils’ Water Authority in 2006 to encourage investment in water savings on the Central Coast.

The fund’s aim is to stimulate investment in innovative water conservation and recycling technologies and practices, and improve water efficiency across all sectors.

The fund provides up to $2 million a year for saving water in the Central Coast region.

Further incentive programs across New South Wales have included rebates for rainwater tanks, policy concessions on greywater use requirements, and stormwater harvesting and use projects.

In metropolitan Sydney some incentive programs included subsidies for both the installation of water efficient measures, and for the preparation of water efficiency plans for major water users.

**Community partnerships and adjustment**

95 (i) – In groundwater WSPs with water recovery objectives, New South Wales advises that significant discussions take place with stakeholders and ongoing consultation occurs through written correspondence or individual enquiries to staff.

In addition, NOW manages the Achieving Sustainable Groundwater Entitlements program, which defines the rules for recovering water in these groundwater systems.

Water planning is the main way of managing overallocated systems.

This consultation addresses issues related to significant decisions which will affect the security of entitlement holders and sustainable water use.

New South Wales has statutory requirements for stakeholder consultation during WSP development.

Management committees were established to prepare the initial high-priority WSPs for public exhibition and eventual approval by the state Minister.

These committees were generally made up of representatives from the environment sector, water users, local councils, catchment management authorities, Indigenous groups and government departments.

However the recent ‘macro’ planning process has used interagency panels for aggregated water sources with Local Land Services (LLSs – previously catchment management authorities) as observers.

The Act requires the exhibition of draft WSPs for the purpose of receiving public submissions.

95 (ii) – An audit of implementation of WSPs that commenced in 2004 has been completed and is available NOW’s website.

This was undertaken by an audit group appointed by the Minister, and was a requirement under the *Water Management Act 2000* (NSW).

The NRC published a discussion paper its 10-year review of the 2004 WSPs and invited submissions from relevant stakeholders on whether implementation of WSPs had contributed better social, economic, cultural and environmental regional outcomes, and on how WSPs could be improved to better contribute to regional objectives in the future.

NOW requested submissions through the same process as the NRC, however it specifically focused on WSP rules, implementation of the plans and water to improve WSP outcomes.

NOW advised that as per the development of WSPs, the review process used Interagency Regional Panels to consider the outcomes of the review and make recommendations to the Minister.

These panels included government representatives from NOW, New South Wales Office of the Environment and Heritage and New South Wales Department of Primary Industries, as well as catchment management authorities and State Water in an observer role.

Submissions received through both processes informed the reviews, which were provided to the Minister for Primary Industries to inform the decision on whether a WSP should be replaced or extended under the provisions of section 43.A of the *Water Management Act 2000* (NSW).

The Department of Planning and Environment uses a variety of tools to support its decisionmaking in the management of environmental water, including expert advice from research organisations, environmental water advisory groups and other government agencies, such as catchment management authorities, NOW and the State Water Corporation.

95 (iii) – New South Wales has statutory requirements for stakeholder consultation during the development of a WSP. This consultation addresses issues related to significant decisions which will affect the security of entitlement holders and sustainable water use.

96 (i) – New South Wales undertakes audits to determine whether the provisions of the WSPs are being implemented every five years.

New South Wales also publishes ‘valley progress reports’ (environmental flow response and socioeconomic monitoring reports) which summarise key implementation and water management activities undertaken through the WSPs.

The reports provide a snapshot of the monitoring and evaluation activities undertaken to assess the ecological and socio-economic performance of WSPs.

In dry years NOW produces an indicative water availability outlook for the regulated rivers in the southern Murray–Darling Basin to assist irrigators with forward planning.

96 (ii) – New South Wales has three government bodies involved in water access licence dealings:

1. NSW Office of Water
2. Land and Property Information (LPI)
3. State Water Corporation (State Water).

Information relevant to the security of water access entitlements are hosted on a number of public registers such as NOW’s water allocations summary and status of applications for approvals.

General water dealings under the Water Management Act 2000 (NSW) include the trading of water access licences, as well as any changes to water access licences, and are registered on the Water Access Licence Register hosted by Land and Property Information NSW.

97 – New South Wales has addressed adjustment issues in a number of water systems where water recovery activities have taken place.

For example, the New South Wales and Australian governments have invested in the Achieving Sustainable Groundwater Entitlements program, which outlines the rules for water recovery activities under the WSPs and provides financial assistance to licence holders to adjust to the changes across the six major inland groundwater systems.

The $650 million Private Irrigation Infrastructure Operators Program (PIIOP) aims to acquire water entitlements via water savings generated from eligible projects by private irrigation infrastructure operators in New South Wales that improve the efficiency and productivity of water use and management, both off and onfarm.

Sustaining the Basin: Irrigated Farm Modernisation (STBIFM) is a program funded by the Australian Government and delivered by the New South Wales Department of Primary Industries (DPI).

STBIFM aims to achieve water savings by improving on-farm water use efficiency and reducing the direct extraction of water from the regulated river water sources from each valley.

STBIFM will be implemented up to October 2017 with annual reviews of the uptake of the infrastructure incentives to guide the ongoing availability of funding and continuation of the project.

DPI will also develop and deliver a capacity building and skills development program to complement the infrastructure incentives.

**Knowledge and capacity building**

101 (i) The Department of Planning and Environment has developed a knowledge strategy to set knowledge priorities for itself and its cluster partners.

The strategy has six themes, each with a goal to achieve priority knowledge needs:

1. biodiversity
2. climate change impacts and adaptation
3. coastal, estuarine and marine environments
4. landscape management
5. pollution
6. water and wetlands.

New South Wales advises that it has developed a science program that links current research, ecological objectives and management objectives for surface water and groundwater plans.

Several projects have been developed including:

1. conducting a pilot project to examine the impact of climate variability on water supply security for 11 urban water supplies in regional NSW
2. participation in the Urban Water Policy Sub-Group and National Urban Water Partnership Forum
3. research through the Environmental Evaluation and Performance Branch of NOW – which has developed a research prospectus that identifies a range of critical knowledge needs where collaboration with external agencies can help improve resource allocation decisions.

101 (ii) – New South Wales developed the *Strategic Water Information and Monitoring Plan 2009* (a requirement under the Australian Water Resources Information Service project) to assist both the Commonwealth and its own jurisdiction by:

1. outlining current data inventory
2. specifying any strategic gaps in data and information systems
3. prioritising data gaps relative to BoM’s data delivery requirements.

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**Water access entitlements and planning framework**

26 – In 2004, Victoria identified water management plans for 10 river systems to complete its commitments on overallocation under the 1994 COAG Water Reform Framework.

Management of these systems has included flow rehabilitation plans, a bulk entitlement conversion process and creating environmental entitlements with water recovered through a range of infrastructure projects.

In general the bulk entitlements specify a requirement to develop a program to manage the environmental effects of extraction.

The *Water Act 1989* (Vic) specifies the creation of sustainable water strategies (SWSs), bulk entitlements, groundwater and streamflow management plans (GMPs and SFMPs) and regional waterway strategies (RWSs).

These apply depending on the particular circumstances of the resource.

At the regional level, four regional SWSs were produced between 2006 and 2011.

At a catchment level, all surface water resources are covered by regional river health strategies, and currently Victoria has eight SFMPs and 10 GWMPs.

27 – The *Water Act 1989* (Vic) provides the statutory basis for water access entitlements and allocations.

It sets rules for the trading of water shares and bulk entitlements.

SWSs provide an overview of the water trading framework and rules, and localised restrictions and rules to trading are stipulated in SFMPs, GMPs and bulk entitlements.

The *Water Act 1989* (Vic) is currently under review with a Water Bill Exposure Draft released in December 2013.

28–33 – The *Water Act 1989* (Vic) establishes the statutory basis and mechanisms for managing Victoria’s water entitlement framework.

The framework is generally NWI consistent.

Surface water and groundwater used for irrigation, commercial or intensive purposes requires a water entitlement.

The four different types of entitlement are bulk entitlements, environmental entitlements, water shares and water licences.

In groundwater systems and unregulated river systems the Victorian Government allocates water by issuing individuals with a section 51 licence to take and use water from waterways; on-stream and offstream dams; springs and soaks; works of an authority; and groundwater.

Surface water and groundwater made available for domestic and stock purposes are not managed through formally issued entitlements but exist as statutory rights under the *Water Act 1989* (Vic) by virtue of an individual’s private ownership of, or access to, land.

A licence provides for the maximum volume of water that can be extracted from a defined source of water, and includes a range of conditions.

Licences may be issued for up to 15 years and the *Water Act 1989* (Vic) permits new or changed licence conditions set by the Minister to be included.

The *Water Act 1989* (Vic) requires the Minister to renew section 51 licences unless there are good reasons not to.

The current review of the *Water Act 1989* (Vic) has proposed an amendment to include rights to alternative water sources (i.e. stormwater), as well as extending the maximum licence tenure to 20 years.

Bulk entitlements provide a right to use and supply water which may be granted to water corporations, the Victorian Environmental Water Holder (VEWH) and other specified bodies (e.g. electricity companies).

Bulk entitlements, environmental entitlements and water shares are all permanent.

Entitlements are unbundled in the major regulated systems in Victoria with two exceptions: the Coliban and Wimmera systems. Coliban system entitlements are held by individuals and companies in the form of ‘take and use’ licences.

The licences are tradeable.

Victoria has stated that the Coliban regulated water system is currently being remodelled and there is no plan to unbundle entitlements due to its relatively small size.

Following the sale of the Wimmera irrigation entitlement to the Commonwealth in December 2012, the Wimmera irrigation system will be decommissioned and therefore unbundling does not apply.

Unbundling does not apply in Victoria to groundwater, unregulated waterways, recycled water, or bulk entitlements and environmental entitlements to regulated waterways; however these entitlements are tradeable in some areas subject to trading rules or Ministerial approval.

Allocations against water shares are determined by the relevant water corporation, usually as a percentage of the entitlement volume.

Seasonal determinations are based on system-specific rules for allocating water to entitlement holders as water becomes or is expected to become available.

34 – Mining, emerging and developing industries must secure water access by obtaining a section 51 licence under the *Water Act 1989* (Vic).

Victoria has signed the National Partnership Agreement on Coal Seam Gas and Large Coal Mining Development.

Under the Agreement, Victoria must refer a coal seam gas (CSG) or coal mining proposal to the Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Developments (IESC) for advice if the proposal is likely to have a significant impact on water resources, either in its own right or cumulatively with other actions.

Advice from the IESC informs decision-making on approvals and conditions.

35 – *The Water (Resource Management) Act 2005* and *Water Act 1989* (Vic) establish the Environmental Water Reserve (EWR).

The *Water Act 1989* (Vic) provides the legal foundation for the independent VEWH. The EWR comprises:

1. entitlements for the environment which are called either environmental bulk entitlements or environmental entitlements
2. rules-based environmental flows through obligations on consumptive entitlements, licences and permits, as set out in management plans
3. where specified in a bulk entitlement, ‘above-cap’ water (water left over after limits on diversion have been reached) or unregulated flows that cannot be kept in storage.

In regulated systems, the EWR is set aside mainly through environmental water entitlements.

In unregulated rivers, the EWR is provided primarily through management of existing diversions via caps on issuing new entitlements, licence conditions, rostering and restriction rules in statutory water management plans and local management rules.

Water corporations are responsible for ensuring that these conditions for the EWR are met.

It is intended that environmental provisions embedded in existing bulk entitlements will be converted into environmental entitlements.

The environmental entitlements and environmental bulk entitlements refer to water usually held in and released from storages.

Environmental entitlements are issued by the Minister for Water under the *Water Act 1989* (Vic).

This may be done following an application by the VEWH.

Under the Victorian Water Entitlement Framework, environmental entitlements are afforded the same surety and subject to the same properties as bulk entitlements. They are held by the VEWH, which was established on 1 July 2011 as an independent statutory body responsible for making decisions on the most efficient and effective use of Victoria’s environmental water entitlements.

The VEWH may trade its water entitlements and allocations if it believes the objectives of the Environmental Water Reserve would benefit.

It requires the approval of the Minister for Water, and in the case of permanent trade, also the Minister for Environment.

As with any consumptive entitlements, environmental entitlements can also specify a range of conditions and obligations.

SWSs are the enabling mechanism through which the Victorian Government, in partnership with regional communities, decides whether additional water is required for environmental needs.

Waterway managers must prepare environmental water management plans for each priority system identified in regional waterway strategies, outlining long-term environmental objectives, desired flow regimes and management arrangements.

The environmental water management plans form the basis of seasonal watering proposals that will inform the development of a Seasonal Watering Plan by the VEWH.

Responsibility for delivery of the Seasonal Watering Plan is delegated by the VEWH to partners including storage operators and waterway managers (catchment management authorities and Melbourne Water).

The current statement of obligations for waterway managers under the *Water Act 1989* (Vic) requires them to integrate the management of the EWR into the development of their regional waterway action plans and integrated river works programs, and to liaise with the storage operator or licensing authorities to negotiate the most effective release pattern for the EWR or extraction regime.

39 – Victoria’s water planning process is generally NWI consistent.

Water extraction is limited through caps on levels of take in the form of sustainable diversion limits and permissible consumptive volumes, and in some cases by specifying triggers for rosters, bans or restrictions.

Caps have historically been set based on current use of the water resource entitlements, or in a few cases using a precautionary approach.

Victoria does not have a single statutory instrument which fulfils all NWI criteria as a water plan.

Several instruments are used in conjunction to meet water planning and management requirements for systems including those where water supply is under stress:

1. SWSs identify key risks to water resources and set out actions to address these risks.

The *Water Act 1989* (Vic) also requires SWSs to identify actions and set priorities to improve the Environmental Water Reserve in accordance with objectives.

1. Bulk entitlements provide a statutory right to use and supply water in declared regulated water systems and specify water sharing arrangements and operating rules.
2. Environmental entitlements are also issued on regulated systems and hold similar statutory characteristics as consumptive bulk entitlements.

SFMPs and GMPs are statutory water plans developed for declared water supply protection areas (WSPAs).

Management plans are local in scale and are in place for a small number of unregulated systems and aquifers.

Water supply protection areas are declared where there is a risk to the resource and stricter management of use is required.

1. The current regional river health strategies (RRHSs) were developed under the *Water Act 1989* (Vic) and are statements of obligations for waterway managers at the surface water catchment scale.
2. They establish priorities for the protection and restoration of river systems but are now beyond their intended date of use.

40 – Water regime monitoring is based on an extensive network of surface water level and flow stations and groundwater bores across the state.

A statement of obligations under the *Water Act 1989* (Vic) requires waterway managers to report annually to the Minister for Water on the implementation of RRHSs, related action plans and resource condition.

The *Catchment and Land Protection Act 1994* (Vic) requires catchment management authorities to report on the condition and management of land and water resources in their region in their annual reports.

Under the *Water Act 1989* (Vic), the Department of Environment and Primary Industries (DEPI) is required to include an update on any SWSs in its annual report, reporting on strategy implementation and the prioritisation of actions.

For bulk entitlements, all water businesses produce annual reports that cover the amount of water returned to waterways, storage inflows, volumes in storage, passing flows and compliance with environmental flow provisions, if applicable.

The Victorian River Health Program report cards have tracked progress against targets set in the Victorian River Health Strategy in 2005 and 2010 and were publicly released but are no longer available online.

The Victorian Waterway Management Strategy (VWMS), released in October 2013, replaces the Victorian River Health Strategy.

Statewide aspirational targets are outlined in the VWMS, which specifies that report cards on progress against targets will be produced in 2016 and 2020.

Licensing authorities are also required to report on the implementation of management plans for WSPAs, including groundwater and streamflow management plans, in their annual reports covering compliance with entitlements and monitoring of streamflow at specific sites.

For groundwater management plans, urban groundwater licence holders are required under the *Water Act 1989* (Vic) to report to their licensing corporations against their licence conditions.

This requires reporting on the groundwater level, extraction volumes, salinity, and the surface water and riverine environment connected to the groundwater resource.

For all other groundwater entitlements, there is no monitoring and reporting on the implementation of a groundwater management plan, but the metered use for each groundwater management unit is reported publicly on DEPI’s Groundwater Online website.

The *Water Act 1989* (Vic) currently requires long-term water resources assessment every 15 years to establish whether any decline in the long-term availability of surface water or groundwater has occurred.

Where such a decline has been demonstrated, the legislation requires a review to be undertaken to identify ways to restore river or aquifer sustainability.

This 15-year resource assessment is under consideration as part of Victoria’s review of the *Water Act 1989* (Vic).

The Victorian Catchment Management Council (VCMC) also reports every five years on the environmental condition and management of Victoria’s land and water resources, through the VCMC Catchment Condition Report.

41— See NWI paragraph 26 for detail on progress.

43 – Victoria has advised that it does not explicitly identify water systems as being overallocated or overused, however the water or flow stress of systems is assessed (e.g. in SWSs).

The *Water Act 1989* (Vic) currently specifies the creation of SWSs, bulk entitlements, waterway management plans and groundwater and streamflow management plans.

All high competition areas in Victoria have water planning arrangements to manage extractions for returning the volume of extraction to environmentally sustainable levels.

For most groundwater and surface water systems a cap has been put in place which limits how much water can be allocated for use.

Extraction limits, or permissible consumptive volumes, are limits that have been set for those systems by the Minister for Water.

Sustainable diversion limits are applied to water use in Victorian unregulated systems.

For groundwater and unregulated river systems, WSPAs were established where there is considerable use and the potential for water stress.

The *Water Act 1989* (Vic) requires management plans to be prepared to protect the groundwater or surface water resources in the WSPA.

Several WSPAs have no final statutory management plan prepared, and in some cases where they exist the development process has taken several years.

In the absence of a statutory management plan, rural water corporations use licence conditions to manage the resource and will develop local management rules which cover management and trading arrangements.

Local management rules are also used in groundwater management areas (GMAs) where groundwater has been intensively developed or has the potential to be.

Groundwater levels in GMAs are monitored quarterly via the DEPI State Observation Bore Network.

The Western Region and Gippsland Region SWSs considered the need and benefit of preparing a statutory management plan in existing WSPAs that do not currently have a plan.

The abolition of some WSPAs was flagged in these SWSs and a number have been abolished or are recommended to be abolished on the basis that they were not highly stressed and did not meet the criteria for declaring or continuing a WSPA.

There are also WSPAs proposed for abolition which under the SWSs were to be maintained.

The process to identify these additional WSPAs is unclear.

Around half of the WSPAs created are now abolished or proposed to be abolished.

Any WSPA without a management plan will be abolished on commencement of the new *Water Act 1989* (Vic).

Where a management plan exists, it will be reviewed in accordance with the review period specified in the plan.

If the review recommends continuation of a statutory plan this will be in the form of the Water Resource Management Order.

Victoria intends to use local management plans where licensed extraction is not the main cause of stress and Water Resource Management Orders where licensed extraction is the issue.

Local management plans (LMPs) have been prepared for all groundwater areas in southern Victoria that do not have a statutory management plan.

These are contained within Groundwater Catchment Statements and are a documentation of current policies and powers under the *Water Act 1989* (Vic).

They do not contain all elements set out in the Western SWS policy, but are to be reviewed in five years.

44 – Since December 2011 a range of water recovery projects have resulted in the creation of 101.7 GL/year in environmental entitlements held by the VEWH (includes 3.8 GL/year in the Murray system from modernisation programs undertaken by NSW under The Living Murray program).

This water is in addition to the measures undertaken by the Australian Government to recover Commonwealth environmental water.

A range of on-farm water savings projects have been undertaken with investment from both the Australian and Victorian governments, in conjunction with irrigators.

Through implementation of projects funded by the Commonwealth’s On-Farm Irrigation Efficiency Program (OFIEP) (rounds 1 and 2) and the Northern Victorian Irrigation Renewal Project (now the G-MW Connections Project) (stages 1 and 2), it is estimated that 104,900 ML of water used on-farm has been saved.

Of this 55,400 ML has been transferred to the relevant investing government.

Further on-farm projects are due to be funded over 2013–18 by the $100 million Victorian Farm Modernisation Project.

Private service delivery agents have also been granted funding through the Commonwealth OFIEP to deliver water savings projects in Victoria.

45 – See actions associated with NWI paragraph 97 for more detail.

46– 51 – As allowed for under NWI paragraph 51, Victoria has opted not to apply the Commonwealth riskassignment framework and the *Water Act 1989* (Vic) does not assign risk.

Principles in the Western SWS state that as far as possible risk will be assigned to those best equipped to manage it.

Currently, under section 33AAB of the *Water Act 1989* (Vic) water rights can be permanently qualified following a 15-year water resource assessment to identify if any long-term reduction in water availability has occurred, and whether this has fallen disproportionately on water users or the environment.

The draft water bill does not contain this requirement.

While risks are not assigned and compensation is not set in the *Water Act 1989* (Vic), water users are provided with mechanisms which assist them to manage their own risk to a degree, including carryover rules, a wellestablished trading framework, and the provision of information about seasonal outlooks, water levels and other data that assists with planning water resource use.

52–54 – Victoria does not have specific cultural water entitlements.

The legislative provision for Indigenous water occurs through section 8A (Rights) of the *Water Act 1989* (Vic), which recognises the right to take water under the *Traditional Owner Settlement Act 2010* (Vic).

Where a natural resource agreement has been entered into, traditional owner groups can take and use water from a waterway or bore for traditional purposes, being the purposes of providing for any personal, domestic or non-commercial communal needs of the members of the traditional owner group entity.

In March 2013 the Dja Dja Wurrung Recognition and Settlement Agreement was made and includes a Water Authorisation Order which lasts for a five-year term and provides for members of the Dja Dja Wurrung to take and use water from a waterway or bore for any traditional purposes as noted above.

Victoria also has settlement agreements under the *Native Title Act 1993* (Cwth) with the following traditional owner groups which provide for access to water as a recognised right from a waterway or bore for traditional purposes:

1. Gunditjmara (2007) – NTA
2. Gunaikurnai (2010) – NTA
3. Gunditjmara (Part B) and Eastern Maar (2011) – NTA.

Indigenous stakeholders were consulted in the development of the SWSs and the VWMS.

The VWMS’s overarching management objective is to provide the level of environmental condition needed to sustain key environmental, economic and social values (including Indigenous cultural values).

It includes a chapter on Indigenous involvement in waterway management and recognises Aboriginal cultural values in regional planning processes for waterways.

It also includes a requirement for traditional owners to be involved in the development of future regional Waterway Strategies and research to identify Indigenous values associated with waterways and incorporate them into regional planning processes.

In the development of seasonal environmental watering proposals for priority waterways, catchment management authority consultation can include traditional owner group representation.

While the primary purpose of environmental entitlements is to achieve environmental benefits, the VWMS states that where consistent with achieving environmental benefit, environmental water managers must also consider whether economic, social and cultural benefits can be achieved.

DEPI, Parks Victoria and several catchment management authorities have Indigenous reference groups to provide input and advice towards their decision-making processes.

55–57 – In Victoria the water planning framework identifies and takes into account interception activities.

Interception is identified as a risk to water availability in SWSs and addressed to some extent in streamflow management plans and groundwater management plans.

The Northern Region SWS states that interception activities, such as plantations, are a possible threat to water resources.

The Western Region and Gippsland Region SWSs set out community and stakeholder consultation options for managing the water impacts of land use change activities.

Victoria’s draft water bill contains several proposals to manage interception activities.

These include:

1. enabling the Minister for Water to declare and manage ‘intensive management’ areas where more active management is required to protect other water users and the environment
2. recognising the rights to existing use in declared areas but controlling expansion of forestry developments covering at least 20 ha or more than 10 per cent of a property, whichever is greater.

The Western SWS proposes intensive management areas for some locations in western Victoria. Proposals in the draft bill do not apply to existing plantation activities.

Farm dams used for irrigation require a water access entitlement and recent changes to the *Water (Irrigation Farm Dams) Act 2002* require new or altered domestic and stock dams to be registered in rural residential areas, which assists with usage estimation and monitoring of changes in use (to inform decisions about the need for changed management in future).

A ‘take and use’ licence is required for all farm dams supplying water for irrigation and commercial uses and for all domestic and stock dams that are built on waterways.

A licence is required for the construction of any bore, however there is no requirement to licence use from a bore if it is only for stock and domestic purposes.

**Water markets and trading**

59 – The Water Register provides public online information about water entitlements and their ownership, and the prices and volumes traded on the water market.

The Water Register:

1. holds water shares recorded by the Victorian Water Registrar, together with mortgages and limitedterm transfers (leases) relevant to these water shares
2. holds records of licences to take and use surface water and groundwater
3. holds records of works-related licences
4. records water allocations that are available in the current season
5. tracks and reconciles volumes of water entitlements by water system and trading zone
6. holds water use licences and delivery shares that are managed by water corporations
7. includes workflows to process water dealings, and keeps audit trails
8. generates statistics and reports on levels of use, directions of trade, and prices paid.

Responsibility for the register is shared between an independent Victorian Water Registrar, DEPI, and rural water corporations.

60 – Nineteen surface water hydrological zones have been established in Victoria for regulated and unregulated systems.

Trading rules exist to limit trade into or out of an irrigation district in response to hydrological constraints, to avoid detrimental impacts on third parties, the environment, or both.

From 11 April to 1 July 2011, allocation trade was suspended on trades between NSW and Victoria and from the Loddon, Goulburn and Campaspe systems to the Murray or interstate, due to storage capacity issues and state entitlement flow considerations.

This was considered in a 2012 review of the carryover rules that apply on the Murray, Goulburn and Campaspe systems.

The review was undertaken with the aim of avoiding sudden trade suspensions and new trading rules have been introduced which will manage storages to achieve this aim.

In unregulated systems, surface water take and use licences are attached to land and remain so, even if the licence is traded, however these licences can be traded within the same catchment subject to certain restrictions.

Once a catchment is declared a WSPA, all water trading into and out of it is suspended until the approval of a draft management plan.

A number of WSPAs remain without management plans, allowing only for temporary trade in those areas.

Victoria’s 2012 Groundwater Management Framework aligns groundwater management boundaries with groundwater catchments and covers all of the state.

It allows for all users in a connected groundwater resource to be managed consistently and for water trading where groundwater is connected.

63 – The Basin states have collaborated on interstate water trading issues such as exchange rate trading and tagged trade.

The tagged trade method has been adopted to facilitate interstate entitlement trading.

In Victoria, interstate tagged entitlement trading to and from Victoria has so far been limited, while interstate allocation trading has increased significantly due to its flexibility and also as a result of environmental water trades.

Tagged interstate entitlement trade is possible in all trading zones in northern Victoria, with the exception of the Broken River, Ovens and King trading zones.

Victoria removed the 4 per cent limit on trade out of irrigation areas in July 2014.

**Best practice water pricing and institutional arrangements**

65 – Victoria uses consumption-based pricing in compliance with the NWI pricing principles agreed by COAG in 2010.

Water authorities carry out key ‘on-the-ground activities’ required for issuing and managing licences.

The *Water Act 1989* (Vic) enables water authorities to charge for these activities.

Fees are designed to recoup the costs associated with the provision of the service provided.

Where direct expenses are incurred to provide the service, these expenses are allocated directly to the cost of the service.

Indirect expenses such as office facilities and utilities, corporate services such as human resources and finance, as well as executive and board costs, generally cannot be directly attributed to particular customer groups or services.

These costs are allocated based on factors such as number of assessments, causal drivers or in proportion to direct expenditure.

Fees can vary by catchment/water system (commensurate with the nature and cost of the activities undertaken).

Water authorities are required to ensure prices are efficient, which aims to eliminate crosssubsidies.

The *Water Amendment (Governance and Other Reforms) Act 2012* (Vic) (Governance Act) converted the three Melbourne water retailers – City West Water Limited, South East Water Limited and Yarra Valley Water Limited – from Corporations Act companies operating under the *Water Industry Act 1994* (Vic) into statutory water corporations that will all operate under the same legislation.

66 (i) – All Victorian urban water authorities recover at least lower-bound and the majority are moving towards upper‑bound pricing.

66 (ii) – The Water Industry Regulatory Order 2012 (Vic) does not have pricing principles specific to recycled water, therefore the Essential Services Commission (ESC) has regard to the NWI pricing principles. Dualpipe service providers are required to publish prices.

Recycled water prices have risen over time to reflect higher levels of cost recovery.

66 (iii) – Since NWC’s 2011 assessment, individual water corporation trade waste price adjustments, managed within the ESC framework, have been made.

No sector-wide review of trade waste policies has been carried out.

66 (iv) – The National Guidelines for Residential Customers Water Accounts were endorsed at the 11th meeting of the Natural Resource Management Ministerial Council (NRMMC) and released on 24 November 2006 by Australian Government, state and territory water ministers.

66 (v) – Victoria has not provided information on cost recovery for rural surface and groundwaterbased systems.

Water charges levied in Victorian areas of the Basin by water corporations are regulated by the ESC as an accredited regulator for the ACCC, according to Water Charge (Infrastructure) Rules 2010 (Cwth).

The ACCC requires regulation according to pricing principles, including pricing transparency and ensuring sufficient revenue for the efficient delivery of the required services, be used by the ESC in its 2013 Price Review.

67 — For northern Victorian water authorities, water planning and management information charges are regulated according to the Water Charge (Planning and Management Information) Rules 2010 (Cwth).

Victoria does not have a specific water resource planning and management charge; however, funding is allocated from the environmental contribution charge for some water planning and management information activities.

Certain water resource planning and management functions are delegated to water corporations, which recover their costs through water pricing.

In the Victorian water industry, water planning and management costs include:

1. management of resource aspects of bulk entitlements
2. administration of licences
3. development and administration of SFMPs and GMPs
4. development of SWSs.

All costs associated with broader water reform, policy development, strategy and regulation are generally borne by the Victorian Government (through DEPI).

68 – Victorian water planning and management information charges applied in the Basin, and the activities funded by them, are published on the websites of delegated authorities (including DEPI) and are monitored by the ACCC.

The Victorian Environmental Contribution is subject to its own legislative requirements and is reported annually in the DEPI annual report.

69 – The ESC assesses proposed capital expenditures of Victorian water businesses for efficiency and prudence when determining the revenue requirements of those businesses.

Major investment decisions about the water infrastructure network are made within the context of guidelines set out by the Victorian Department of Treasury and Finance under its lifecycle guidance materials and under the Water Act 1989 (Vic).

For significant investments, public non-financial corporation (PNFC) entities which include water corporations are required to submit a detailed business case for the Treasurer’s approval. These business cases are reviewed and evaluated by the Department of Treasury and Finance.

DEPI has developed a Water Savings Protocol for Irrigation Modernisation Projects as a means of calculating, auditing and allocating water savings generated from major irrigation modernisation projects in Victoria.

70–72 – No new entitlements can be issued in fully developed surface and groundwater systems.

If there is unallocated water available for either surface or groundwater, under the Water Act 1989 (Vic) the Minister may grant new water shares subject to the requirements of the Act.

For significant new allocations the government will establish an auction or tender process by public advertisement of the sale, and setting of a reserve price.

Water savings through infrastructure investment are auctioned as high and low reliability water shares.

A small number of surface water systems in southern Victoria have unallocated entitlements available for users.

73 – Victoria manages environmental externalities through a range of regulatory measures including setting extraction limits and setting conditions in water use licences, including an annual use limit to manage salinity and the maximum volume of water in an irrigation season that may be used on the land described in a water use licence or water use registration.

The Minister of Water determines an environmental contribution which is levied on all Victorian water businesses under the Water Industry (Environmental Contributions) Act 2004 (Vic) and paid into the Victorian Government’s consolidated fund.

These charges are levied to fund various water planning and management activities captured by the rules, including water-related initiatives that seek to promote the sustainable management of water and address the consequential adverse impacts to the environment associated with the provision of waterbased services.

The authorities pass costs onto customers through water charges, which are regulated by the Essential Services Commission (ESC).

The Minister must prepare a report setting out details of the expenditure of all money paid as environmental contributions by water supply authorities in that financial year, provided in DEPI’s annual report.

The Mallee irrigation region has salinity protocols which originated in the Nyah to SA Border Salinity Management Plan 1993.

Developers of new, although not existing, irrigation pay a levy based on the magnitude of impact on river salinity, which covers the cost of management.

In Salinity Impact Zones, ministerial determinations can also require a levy to offset salinity impacts generated on land not previously irrigated.

75 – Victoria has provided benchmarking information for inclusion in the National Performance Reports on urban water utilities and rural water service providers.

At the time of writing, the future of this reporting is uncertain.

76 – The ESC recovers all its annual operating costs through licence fees paid by the water utilities.

The fees include Victoria’s share of costs for the production of the National Performance Reports.

The cost of performance data audits is borne by the water utilities.

77 – The ESC is Victoria’s independent economic regulator.

The ESC regulates prices and fees charged by water corporations for issuing and managing licences, and monitors service standards and market conduct.

The Water Industry Regulatory Order (WIRO) sets out the regulatory approach that the ESC is required to adopt in assessing the prices and revenues proposed by the water businesses.

The WIRO does not apply to pricing determinations made by the ESC with respect to Murray–Darling Basin water charges levied by GoulburnMurray Water (G-MW) and Lower Murray Water.

Water corporations are required to prepare a five-year water plan which, among other things, outlines pricing for surface water and groundwater.

The plans must be approved by the ESC which assesses revenue required over that period, and approves or determines the manner in which prices will be set.

79 (i) a) – The VEWH manages the state’s environmental entitlements (created via projects to recover additional water for the environment), but not the entire EWR (i.e. not passing flows or abovecap water).

The VEWH decides on the most effective use of the Water Holdings, including use, trade and carryover.

Victorian sites may also be allocated environmental water from other sources, including The Living Murray (TLM) program, the Commonwealth Environmental Water Holder (CEWH) and through donations from individuals, community groups and other organisations.

The VEWH coordinates the use of TLM and CEWH water entitlements in Victoria to maximise environmental outcomes.

Victoria’s waterway managers are responsible for local planning and the delivery of environmental water holdings.

They also have a role in planning for the broader EWR.

Catchment management authorities undertake flow studies for regulated rivers identified as a priority in their particular RRHS.

They are also preparing longterm environmental water management plans and seasonal watering proposals, which are considered by the VEWH in the development of the seasonal watering plan.

Watering is implemented through catchment management authorities and other partners such as water corporations.

79 (i) b) – Victoria has established management and institutional arrangements to ensure the achievement of environmental and other public benefit outcomes for resources shared with other jurisdictions, including:

1. Intergovernmental Agreement on Murray–Darling Basin Reform 2008
2. Intergovernmental Agreement on Implementing Water Reform in the Murray–Darling Basin 2013
3. the *Water (Commonwealth Powers) Act 2008* (Vic), which refers powers to the Australian Government in order to implement the MDB-focused *Water Act 2007* (Cwth)
4. the Further Agreement on Addressing Water Overallocation and Achieving Environmental Objectives in the Murray–Darling Basin: Control and Management of Living Murray Assets 2009.
5. the Intergovernmental Agreement on Addressing Water Overallocation and Achieving Environmental Objectives in the Murray–Darling Basin 2004 and the Supplementary Agreement 2006
6. the Snowy Water Inquiry Outcomes Implementation Deed, the Snowy Water Licence, the Snowy Scheme Long Term Arrangements Deed and the Snowy Bilateral Deed
7. the 1985 Border Groundwaters Agreement (updated 2005).

79 (i) c) – Surface water and groundwater are defined in the *Water Act 1989* (Vic) and their connectivity is explicitly recognised.

Connectivity must be taken into account in the assessment of individual licence applications.

SWSs recognise the importance of managing groundwater/surface water interactions.

The Upper Ovens River Water Supply Protection Area Water Management Plan (2012) is the first conjunctive management plan in Victoria and explicitly integrates surface and groundwater management.

79 (i) d) – There are a number of requirements to report on the achievement of environmental and other public benefit outcomes, including the following:

1. *Environmental watering in Victoria*, an annual report prepared by the VEWH, details the outcomes of environmental watering programs across the state that use environmental water from Victorian water entitlements, TLM, the CEWH and donated water.

Details of environmental watering activities are also provided on an annual basis in the Victorian Environmental Watering Booklets which are available in hard copy and online.

The latest report produced covers 2012–13.

Delivery partners, including Melbourne Water and catchment management authorities, also provide information on environmental watering activities through their annual reports.

1. The Victorian Environmental Flows Monitoring and Assessment Program (VEFMAP) provides a method for relevant waterway managers to monitor and report on environmental flow outcomes over the long term for eight major regulated river systems in Victoria.

Victoria has reported that the analysis stage in the development of VEFMAP is close to completion, and outcomes on the assumptions underlying environmental watering will soon be made available.

Public reporting of VEFMAP is not mandatory.

1. For unregulated systems, streamflow is monitored under SFMPs, which are required to be reviewed against their objectives at a frequency of not less than five years.

However, the plans do not monitor stream health, and state that they ‘will not attempt to demonstrate any environmental improvements from implementation of environmental flows’.

Rather, water resource health is monitored through state and CMA processes (eg Index of Stream Condition).

Since the initial SFMPs were put in place in 2003, there have now been six reviews completed and reported as part of their annual reports.

Reviews have identified issues, however changes are not always recommended in response to findings due to the need for a statutory process to amend the plans, for example addressing small volumes of overallocation in Stringybark Creek, the adequacy of existing plans to achieve environmental objectives, and the ability to address minor issues over time.

See also actions associated with NWI paragraph 40 for more detail.

79 (i) e) – Under the *Water Act 1989* (Vic), environmental water held as an entitlement can be traded on the temporary water market if it is not required to achieve environmental or other public benefit outcomes.

Rulesbased environmental water cannot be traded.

79 (i) f) – Victoria has participated in the development of the draft national high ecological value aquatic ecosystems (HEVAE) framework and has adopted the framework’s approach.

HEVAEs are included in priority setting processes for catchment management authority waterway management.

79 (ii) – Victoria has adopted a mix of water recovery measures to achieve modified environmental and other public benefit outcomes in surface water systems that are fully utilised.

The measures include specific initiatives (TLM), efficiency gains through improved infrastructure (Wimmera Mallee Pipeline and the GMW Connections Project), water buybacks and the management of existing entitlements.

Waterway managers participate in the various planning processes (such as sustainable water strategies and water management plans) regarding water sharing and any additional water recovery that might be required for the environment.

This includes investigating ways to achieve environmental water outcomes without additional water (e.g. the use of structural works).

The program of river restoration activities undertaken by waterway managers seeks to improve the environmental condition of waterways via non-water related onground activities including the construction of fishways, riparian and in-stream works.

Victoria is not employing water recovery measures in any groundwater system, but has advised that groundwater systems have limits placed on allocation through a range of processes, including qualifications specified in groundwater management plans, water shortage declarations or allocation determinations by water authorities as part of licence conditions.

Victoria is currently embarking on a program to identify and prioritise groundwaterdependent ecosystems that may be affected by groundwater use.

**Water resource accounting**

81 – Victoria has participated at a national level in the development of national water accounting standards and reporting frameworks, including the Water Accounting Conceptual Framework, the General Purpose Water Accounting Reports and the Australian Water Accounting Standards 1 (AWAS 1).

Victoria uses AWAS 1 and the Water Accounting Conceptual Framework in providing data to the Bureau of Meteorology (BOM) for the general purpose water account.

Victoria participated in the development of the AWAS 2.

82 – DEPI produces the Victorian Water Accounts (VWA) which provide an annual overview of water availability and use across Victoria at bulk supply level, including a detailed water account for each of the state’s 29 river basins.

The accounts also provide information on water set aside for environmental purposes from the Victorian water entitlement and allocation framework.

Published in hard copy and on the DEPI website, the VWA also provides assessments of rainfall, streamflow and groundwater levels, as well as water storage information.

83 – The Water Register is the public register of all water-related entitlements in Victoria. It records:

1. who has been issued with water shares and the reliability, tenure, location and holding in megalitres for each water share
2. how much water has been allocated against water shares, how much has been used, and where it was used
3. registered interests in water shares, such as mortgages and leases.

It also provides summary reports on volume of water shares in each water system, annual allocation, use and the trading history, including average prices for each water system.

A water share transaction can be lodged online with a trading rules engine.

The register allows for trading between groundwater and surface water systems where trading is permitted by a management plan.

85 (i) – The VEWH is required to report on the volume of water released, delivered and used at each of the environmental watering sites.

As water is allocated to, or delivered from the entitlements, these amounts are recorded on the Victorian Water Register.

85 (ii) – DEPI reports annually on the environmental watering program in the Victorian Water Accounts, which include water set aside through entitlements, passing flow requirements, SFMPs, GMPs, and water leaving the MDB.

Implement information measures 86 86 – See actions associated with NWI paragraph 81. Metering and measuring actions: • develop metering and measuring actions • implement metering and measuring actions.

87–88 87–88 – Victoria’s 2010 Implementation Plan for Non-urban Water Metering identified agency metering responsibilities and the dates by which the actions are required.

Under the implementation plan, an estimated 18,924 meters are to be upgraded and a further 7523 meters installed.

Victoria’s business case for the program is pending Commonwealth approval.

Without funding, meter upgrades will not occur before the end of their useful life.

A draft policy which seeks to clarify existing obligations and support the rural water corporations in nonurban metering implementation was released for comment in March 2014.

National guidelines on water reporting: • develop national guidelines on water reporting • apply national guidelines on water reporting.

89 89 – Victoria is participating in the development of the Environmental Water Accounting Standards through the National Water Accounting Committee.

In conjunction with other jurisdictions, Victoria has agreed the framework and arrangements for the National Framework for Non-urban Water Metering (2010).

Also see actions associated with NWI paragraph 81.

91 (i) – The Water Efficiency Labelling and Standards (WELS) scheme is a joint initiative of the Australian and state and territory governments.

The *Water Efficiency Labelling and Standards Act 2005* (Cwth) provides the legal framework for the scheme.

Victoria has enacted complementary legislation (the *Water Efficiency Labelling and Standards (Victoria) Act 2005*).

91 (ii) – The Smart Approved WaterMark is a not-for-profit organisation established by four associations: the Australian Water Association, Irrigation Australia, the Nursery and Garden Industry, Australia and the Water Services Association of Australia.

It is overseen by a steering committee with representation from the Australian and state and territory governments, water utilities, the four governing associations, and the chair of the Technical Expert Panel (an independent panel which assesses applications to the scheme).

Project establishment was finalised in 2011 and a report on the delivery of the Smart Approved WaterMark was provided to the Department of the Environment.

The program continues to provide product efficiency ratings to consumers.

91 (iii) – Water restrictions are managed by Victoria’s urban water corporation and are only applicable to customers on a reticulated supply.

These restrictions do not apply to the use of recycled, reclaimed, rain or grey water except where it is supplemented in any way by drinking water.

The Victorian Government’s revised permanent water saving rules took effect on 16 December 2011 following a statewide review of Victoria’s Uniform Water Restriction and Permanent Water Saving Rules, instigated as a result of the extended drought.

These apply across Victoria and form part of each water corporation’s permanent water saving plan.

The rules do not preclude water restrictions during drought periods, but are intended to assist with efficient water use in the long term.

The updated restrictions will be used when required to balance demand during times of water shortage.

Each urban water corporation is required to prepare a drought response plan for urban systems under their statement of obligations.

The drought response plan is intended to govern the management of the supply of water in a drought or when water is limited.

The plan may include regulating water use via a by-law for water restrictions.

92 – Victoria has participated in national level working groups and committees to develop the Australian Guidelines for Water Recycling: Managing Health and Environmental Risks (2009) which address water quality guidelines for recycled and stormwater use.

Victoria also participated in the production of the Commission’s national review of water restrictions.

The Office of Living Victoria (OLV) was established in 2012 to deliver Victoria’s next iteration of urban water reform.

It administers the $50 million Living Victoria Fund to support the development of Integrated Water Cycle Management (IWCM) projects across Victoria.

The fund is not designed to support large-scale capital projects, or operational or recurrent project needs.

OLV recently released the draft Melbourne’s Water Future Strategy which aims to develop ‘an integrated and resilient water system, which is planned and managed to support liveable and sustainable communities, protect the environmental health of urban waterways and bays, provide secure water supplies efficiently, protect public health and deliver affordable essential water services’.

The draft proposes a number of actions, for example the development of local and regional water cycle plans for Melbourne by 2014, a regulatory impact statement that considers the net community costs and benefits of implementing new controls to improve new building water performance, establishing new objectives for the water authorities and adopting a statewide approach to valuing the nonfinancial benefits of innovative water projects.

OLV’s Living Victoria Water Rebate Program, launched in 2012, expanded previous rebates to include a range of water efficient appliances, plumbing retrofits, and water efficiency items.

OLV is currently undertaking a review of knowledge, research and innovation in the water sector, and is partnering with research agencies and institutions, such as the CRC for Water Sensitive Cities.

95 – Victoria consulted stakeholders widely as part of the development of its SWSs, Melbourne’s Water Future Strategy and the new Victorian Waterway Management Strategy.

Community consultation is required under the *Water Act 1989* (Vic) during periodic reviews of SWSs, longterm resource assessments and management plans for WSPAs.

For WSPA management plans, the Minister appoints a consultative committee of stakeholder representatives to develop the plans.

The committee must consult the community, including Indigenous communities, during development.

In WSPAs where local management rules are being implemented, stakeholder consultation is not required to the same extent as for water management plans; for example, rules are not developed through stakeholder representative groups and do not require public consultation.

Bulk entitlements are established through an engagement process and include hydrological and environmental assessments.

Requests to allocate new environmental entitlements or amend existing entitlements are advertised in local newspapers and on DEPI’s website.

The process may involve consultation with stakeholders and local communities and submissions to DEPI to identify all the potential impacts of the proposal.

The Minister for Water may call for submissions when a request is received, and will consider any submissions before making a decision.

Environmental Watering Advisory Groups or equivalent processes were used by relevant waterway managers to provide input into environmental water planning and implementation processes.

Stakeholders with an interest or role in environmental watering in the relevant regulated catchments are consulted in the development of annual environmental watering priorities for the waterway manager’s seasonal watering proposals.

These include water authorities, the CEWH, land managers and the Murray–Darling Basin Authority.

The Victorian Government convened a 33-member group to provide input and advice on the development of the Basin plan. The Basin Plan Advisory Group included community, industry, environment, local government and Indigenous representatives.

96 – SWS implementation and prioritisation of actions is reported through DEPI’s annual report and on its website.

Overall progress of the SWS actions is not clear from these reports as they do not contain specifics on all actions completed or if timeframes have been met.

The Water Act 1989 (Vic) requires annual reports for each SFMP and GMP to be prepared by the authority responsible.

The reports detail activities in administering and enforcing each management plan.

DEPI’s online Monthly Water Report provides a summary of the status of Victoria’s water resources and water supplies at the end of the reporting month.

It provides information on rainfall, streamflow, water storage levels, irrigation allocations, restrictions on unregulated streams, the EWR and seasonal outlooks.

Information on groundwater levels for the report is updated on a quarterly basis.

The Victorian Water Resources Data Warehouse provides online access to information on water quality and quantity throughout the state.

DEPI produces Victorian Water Accounts which provide an annual overview of water availability and use across Victoria at bulk supply level, including a detailed water account for each of Victoria’s 29 river basins.

Some water corporations produce publicly available annual local water reports at a basin level, which provide information on rainfall, river flow and groundwater level trends, restrictions, the number of irrigation licences and their use and emerging local water issues.

See also NWI paragraph 79 (i) d) for further details.

97 – Both the Australian and Victorian governments have invested in on-farm water savings projects.

The Australian Government has begun Round 2 of the Strategic Water Purchase Initiative in Victoria with a budget of up to $5 million.

The initiative aims to pursue environmental water purchase opportunities arising from the decommissioning of channels involved in the roll-out of the G-MW Connections Project.

Victoria provides support for adjustment processes through incentives for whole farm plans under the Linking Farms and Catchments to Modernisation Stage 2 initiative ($5.5 million over four years).

As part of this, DEPI provides support to irrigators in relation to the modernisation and reconfiguration of their supply system to improve irrigation efficiency and work towards bridging the gap to Basin plan SDLs.

The G-MW Connections Project to modernise irrigation systems in the region began in 2007 as the Northern Victoria Irrigation Renewal Project (NVIRP).

In October 2011, the Australian and Victorian governments signed an agreement for $1.216 billion investment from the Commonwealth, building on the $1 billion first stage of the project, which was funded by the Victorian Government, Melbourne Water and irrigators.

Each investor receives a defined share of the water savings achieved from improving the efficiency of the channel delivery network.

Of these, the Australian and Victorian governments’ shares of the water savings become environmental entitlements.

When complete, 214 GL of water savings will be transferred to the Commonwealth as environmental entitlements.

Further on-farm projects are due to be funded over 2013–18 by the Commonwealth through the Victorian Farm Modernisation Project under which 55 per cent of water savings are provided to the Commonwealth for the environment and the remaining 45 per cent to participating Goulburn-Murray irrigators.

Other private service delivery agents have also been successful in gaining funding through the Commonwealth On‑Farm Irrigation Efficiency Program, to deliver water savings projects in Victoria.

101 – A range of environmental monitoring and research programs is coordinated through DEPI, including the Index of Stream Condition, the Index of Wetland Condition, the pilot Index of Estuary Condition and Victorian contributions to the Murray–Darling Basin Ministerial Council’s Sustainable Rivers Audit.

Research projects are also conducted via catchment management authorities through the Victorian Investment Framework and TLM program.

Since 2005, Victoria has invested more than $6 million in VEFMAP, which aims to monitor ecosystem response to environmental flows.

VEFMAP aims to establish a statewide framework for environmental flows monitoring in nine high-priority regulated rivers.

26 – At the commencement of the NWI, Queensland did not have any overallocated systems to address under the 1994 COAG Water Reform Framework, however undertook to complete 23 water resource plans (WRPs) to provide for the allocation and sustainable management of water in priority catchment areas.

Queensland has finalised all 23 WRPs, with resource operations plans (ROPs) in place to implement the WRPs in all but the latest plan area, the Wet Tropics. ROPs specify water sharing arrangements, trading rules, infrastructure operating rules (including environmental flow releases) and monitoring and reporting requirements.

Queensland has also signalled its intention to develop a Cape York WRP, with a draft strategy available for public consultation.

The Queensland Government has announced a strategic review of the *Water Act 2000* (Qld), one aim of which is to review the water resource planning process to remove duplication and rationalise timeframes associated with the current two plan process.

The inclusion of groundwater resources into WRPs is in progress based on risk.

Overallocation for identified groundwater systems is being progressively addressed (see comments against NWI paragraphs 43–45).

27 – The *Water Act 2000* (Qld) establishes a NWI-consistent statutory planning framework.

28–33 – Under the Water Act 2000 (Qld) Queensland’s water resources are allocated and managed through water access entitlements in areas where there is a WRP and associated ROP.

ROPs are in place for all WRPs except the Wet Tropics.

The water resource planning process provides for water entitlements to convert to water allocations which are separate from land and are tradeable.

Recent amendments have been made to the Water Act 2000 (Qld), which extend the expiry date of existing licences and new licences to 30 June 2111, unless otherwise specified in a WRP or a ROP.

34 – Water extraction for petroleum and gas production is authorised under the Petroleum and Gas (Production and Safety) Act 2004 (Qld) and the Petroleum Act 1923 (Qld).

Water rights under the Petroleum and Gas (Production and Safety) Act 2004 (Qld) for coal seam gas (CSG) activities are non-volumetric, nonperpetual, not tradeable and are connected to the land (a petroleum tenement).

Water extraction rights for petroleum and gas production are outside of Queensland’s water planning and entitlement system.

Queensland has signed the National Partnership Agreement on Coal Seam Gas and Large Coal Mining Development (2012).

Under the Agreement, Queensland must refer a CSG or coal mining proposal to the Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Developments (IESC) for advice if the proposal is likely to have a significant impact on water resources, either in its own right or cumulatively with other actions.

Advice from the IESC informs decision-making on state and Commonwealth approvals and conditions.

The Queensland Government does not support the proposition that water management for unconventional gas should be fully integrated with states’ water planning and entitlement arrangements for other uses.

Queensland is of the view that NWI paragraph 34 is applicable to ‘associated water’ use for the resources sector.

NWI paragraph 34 recognises that ‘there are special circumstances facing the minerals and petroleum sectors that will need to be addressed by policies and measures beyond the scope of the NWI’.

35 (i) and (ii) – In Queensland environmental water provisions are predominantly provided through a rulesbased framework with planned water embedded into sharing rules contained in WRPs and ROPs.

As required by the Water Act 2000 (Qld) ecological outcomes are included in WRPs with strategies intended to achieve these outcomes included in WRPs and ROPs.

ROPs specify water sharing arrangements including environmental flow releases.

The Water Act 2000 (Qld) was amended through the Water and Other Legislation Amendment Bill 2011 (assent date 24 November 2011) and allowed the Commonwealth Environmental Water Holder (CEWH) to acquire and hold water licences (e.g. groundwater and overland flow) separate to land.

The CEWH now holds water entitlements for several rivers in the Queensland Murray–Darling Basin.

During 2012–13, Queensland established administrative and operational pathways for the Commonwealth to start recovering groundwater and overland flow licences for environmental purposes separate to land.

A water management plan was declared for the Upper Condamine Alluvium in August 2012, and is recognised as an Interim WRP under the Water Act 2007 (Cwth).

The plan provides for trading of relocatable groundwater licences in this area.

The plan allows groundwater licence holders to be eligible to participate in the Commonwealth’s water purchasing program Restoring the Balance in the Murray–Darling Basin.

Additionally, engagement with the Commonwealth during 2012–13 led to Queensland expanding the scope of the eligibility criteria for its Healthy HeadWaters Water Use Efficiency program (for water recovery) in order to improve participation.

35 (iii) – Rules-based water is not held as an entitlement and cannot be traded.

Water entitlements can be purchased and used for environmental purposes.

39 – Queensland water planning processes are NWI consistent. In preparing WRPs, technical assessments are prepared on relevant social, economic and environmental factors.

Community submissions are invited during development of the WRP and ROP and a publicly available report records the outcomes of issues raised and the reasons for the decisions taken.

40 – In accordance with the requirements of the Water Act 2000 (Qld), the Minister is required to prepare a report periodically on the performance and implementation of each WRP, with each plan specifying the reporting period.

The Department of Natural Resources and Mines (DNRM) collects, manages and reports data on the quantity and quality of surface water and groundwater in the state’s rivers and aquifers.

For example, streamflow data and historical monitoring data services are available via the Water Monitoring Data Portal.

Science on the water requirements of natural ecosystems is collected through the Environmental Flows Assessment Program (EFAP), a statewide monitoring and assessment program that aims to evaluate the effectiveness of each WRP in achieving its stated ecological outcomes.

Brief reports of EFAP projects and results in each WRP area are published by DNRM.

The Water Act 2000 (Qld) has been amended to allow the Minister to approve an extension of the term of a WRP from 10 years up to a maximum of 20 years.

The Minister’s decision is subject to a public submissions process.

Furthermore, a risk assessment and review process is also undertaken, in each case, to assess the effectiveness of the current plan and the appropriateness of extending it.

This extension process is currently being considered for the Barron, Pioneer and Georgina-Diamantina WRPs.

The Minister may still amend a plan at any time, and must act to amend a plan if satisfied that the plan outcomes are not being achieved, or the objectives or strategies are no longer appropriate.

41 – See NWI paragraph 26 for detail on progress.

43 – Priority groundwater areas, where resources are most at risk, are being progressively incorporated into WRPs.

The Minister has announced a review of the Border Rivers, Moonie River and CondamineBalonne WRPs to include groundwater.

Queensland advises that the plans will be finalised by the end of 2014.

Overuse has been identified in three groundwater systems incorporated into WRPs outside of the Murray–Darling Basin.

Reductions in extractions are being managed under the annual announced allocation process while final arrangements will be given effect through ROP amendments.

For systems within the Murray–Darling Basin, sustainable extraction limits and timeframes for their implementation have been set by the Murray–Darling Basin Plan (the Basin plan).

For surface water systems these extraction limits will replace those in current WRPs to meet the Basin plan’s Sustainable Diversion Limits (SDLs).

Commonwealth water recovery measures to meet these extraction limits are underway in the CondamineBalonne and Queensland Border Rivers catchments.

The Commonwealth has not yet commenced acquisition of groundwater entitlements in the Upper Condamine Alluviums.

45 – See actions associated with NWI paragraph 97.

46–51 – On 26 November 2012, following an amendment of Queensland’s water management legislation, the Water Minister made a determination that recognised Queensland’s provisions as applying the riskassignment framework.

52–54 – The Cape York Peninsula Heritage Act 2007 (Qld) provides for the protection of Indigenous cultural and heritage values in water where areas of international conservation significance are declared.

The Act establishes a requirement for an Indigenous water reserve or allocation in a WRP in the Cape York Peninsula region.

In other areas of Queensland, Indigenous water reserves have been included in a number of WRPs to provide access to water for Indigenous economic or social benefit.

The Water Act 2000 (Qld) was amended in 2013 to allow Indigenous people to take or interfere with water for traditional activities or cultural purposes as a right under the Act.

55–57 – Queensland recognises interception activities in the Water Act 2000 (Qld).

Overland flow water is vested in the state in accordance with section 19 of the Water Act 2000 (QLD).

A person may take overland flow for any purpose unless there is a moratorium notice or a WRP that limits or alters the water that may be taken.

Queensland has undertaken risk assessments as part of WRP planning processes.

Where necessary, a regulatory and management regime for overland flow water is specified in the relevant WRP and ROP.

Estimates of water for stock and domestic purposes are allowed for in water allocation decisions.

Water for mining operations generally requires a licence, however water to support CSG operations is licensed under the Petroleum and Gas (Production and Safety) Act 2004 (Qld) rather than the Water Act 2000 (Qld).

Although these rights may contain restrictions intended to minimise adverse impacts, they are not volumetrically controlled.

In addition, Queensland has recently introduced the Regional Planning Interests Act 2014 (Qld) and Regional Planning Interests Regulation 2014 (Qld) which seeks to strike an appropriate balance between protecting priority land uses (priority living areas, priority agricultural areas, strategic environmental areas and strategic cropping areas) and economic development.

Approval is required when a resource activity or regulated activity – such as broadacre cropping or water storage (dam) – is proposed in an area of regional interest.

**Water markets and trading**

59 – Queensland’s Water Allocations Register (WAR) has operated since 2003, recording water access entitlements and associated dealings.

It provides for transfers, leases and registration/protection of thirdparty security interests and encumbrances over water titles.

Permanent trade prices are extracted from the WAR with summaries published on the DNRM website.

60 – Queensland’s water market allows for trade subject to environmental objectives and the entitlement security of other water users.

The trade of water is administered under defined and public rules.

Queensland has reported that approximately 75 per cent of the volume of water allocated in Queensland is held as tradeable water allocations.

Queensland is continuing to create tradeable water allocations through the completion of ROPs.

There are currently 22 ROPs in place.

Trading in Queensland is generally limited to intra-catchment trading because most catchments are not hydrologically connected.

63 – Not applicable to Queensland.

**Best practice water pricing and institutional arrangements**

65 – In South East Queensland (SEQ), household water and sewerage bills include water distribution and sewerage charges set by the SEQ service providers, and a volumetric bulk water price set by the Queensland Government.

Service providers’ charges reflect the costs of operating and maintaining the water distribution network, the costs of operating and maintaining the sewerage network, and the costs of retailing services such as billing systems and printing.

These charges usually take the form of a fixed water access charge, a fixed sewerage access charge and volumetric water usage charges (using tiered charging arrangements).

Unitywater introduced a volumetric sewerage charge on 1 July 2013.

Service providers set their own prices with price monitoring undertaken by the Queensland Competition Authority (QCA).

Water prices are determined annually by each SEQ service provider with price monitoring being undertaken by the QCA for a two-year period, starting in 2013.

The QCA ‘s final report on price monitoring of SEQ service providers for 2013–15 (released in March 2014) found no evidence of the exercise of monopoly power by Unitywater, Queensland Urban Utilities, Logan Water and Gold Coast Water, but was unable to establish whether Redland Water is exercising its monopoly power.

Outside SEQ, Queensland’s *Local Government Act 2009* outlines the framework for charging for water, but the setting of actual prices is a matter for each local government.

The *Local Government Act 2009* (Qld) expands the requirement for consumption-based water pricing to all local governments.

Consumption-based pricing is based either on a full consumption charge on the volume of water used, or on a two-part tariff with fixed and variable charges.

For local governments that operate water and sewerage businesses that exceed specified expenditure thresholds, the businesses must apply full cost recovery for water and sewerage services at a minimum and set a positive rate of return.

There is consistency in pricing policy across SunWater’s irrigation schemes.

Permanent allocations can be traded within SunWater irrigation schemes.

Most interstate water trade in the Border Rivers area results in water being traded from New South Wales into Queensland.

The water that is traded into Queensland maintains the charges that are applied by New South Wales.

66 (i) – Bulk water prices paid by SEQ service providers to Seqwater are set by government – most recently for the period 1 July 2013 to 30 June 2015.

The prices are based on a 10-year price path, ending in 2017–18.

From that time, Seqwater’s urban bulk water prices for SEQ service providers are set to recover the costs of the bulk water supply system including an allowance for capital expenditure and a return on capital.

66 (ii) – The QCA monitors the costs and revenues of the SEQ service providers where their activities include producing recycled water.

66 (iii) – Trade waste pricing is the responsibility of individual service providers, not the state government.

In most cases, this will be the local council.

66 (iv) – The National Guidelines for Residential Customers Water Accounts were endorsed at the 11th meeting of the NRMMC and released on 24 November 2006 by Australian Government, state and territory water ministers.

66 (v) Queensland adopted lower-bound pricing for SunWater’s 22 bulk water supply schemes for the period 2012–13 to 2016–17.

In 2012, the QCA recommended irrigation prices apply to 22 of SunWater’s water supply schemes for the period 2012–13 to 2016–17, and in 2013, the QCA recommended irrigation prices to apply to seven of Seqwater’s water supply schemes for the period 2013–14 to 2016–17.

The Queensland Government’s policy was that irrigation prices should at least cover the efficient lower-bound costs of supplying water and, where irrigation prices were below lower-bound pricing, a price path to move towards lower-bound cost recovery should be implemented.

The QCA was directed to make its recommendations consistent with this policy.

In 2012, the government directed SunWater to implement all of the QCA’s recommendations in regard to the 2012–13 to 2016–17 SunWater irrigation price path.

In 2013, the government directed Seqwater to implement all of the QCA’s recommendations in regard to the 2013–14 to 2016–17 Seqwater irrigation price path.

67 – Water planning and management costs in Queensland are partially funded by a range of transactionbased water fees and usage charges.

68 – As Queensland does not have full cost recovery water planning and management charges in place, there is no public reporting of these charges.

69 – The QCA final report recommended that any future bulk water storage facilities be developed by the private sector, unless there were compelling public good or market failure reasons not to do so.

The government accepted this recommendation and noted it had already moved to implement alternative delivery models for infrastructure projects wherever possible.

70–72 – Any unallocated water identified through the water resource planning process can be made available when there is sufficient demand and other mechanisms are not available to potential water users.

Water licences for unallocated water are granted through a competitive tender process for the release of general reserve unallocated water.

Three general reserve unallocated water processes have been undertaken.

Under the Water Resource (Great Artesian Basin) Plan 2006 (Qld), 7200 ML of water was made available from the Surat, Surat East and Surat North management areas.

In early 2014 785 ML was granted through this process. Under the Water Resource (Baffle Creek Basin) Plan 2010 (Qld), 11,600 ML of water was made available, while 33 ML was granted through this process in early 2014.

State or strategic reserve unallocated water is granted through a non-competitive process.

In the Water Resource (Great Artesian Basin) Plan 2006 (Qld), a total of 10,000 ML of state reserve is available.

To date 2183 ML of state reserve has been granted.

In the Water Resource (Gulf) Plan 2007 (Qld) area, 58,000 ML of strategic reserve is available with 2266 ML granted so far.

An unallocated water release process was completed for general reserve unallocated water in the Water Resource (Gulf) Plan 2007 (Qld) area in mid-2013.

Water licences totalling 94,200 ML were granted following a competitive tender process.

73 – Queensland manages environmental externalities through setting extraction limits in WRPs and specifying conditions for the use of water in water use licences where used.

Queensland has developed a voluntary mechanism for nutrient management that offers an alternative investment option for regulated point source operators to manage their water emission requirements under the Environmental Protection Act 1994 (Qld), while delivering an improvement in water quality.

The mechanism provides guidance to environmental authority holders in using alternative nutrient reduction actions to counterbalance nitrogen and phosphorous loads contained in water emissions.

Alternative nutrient reduction actions may come from another point source, or may be achieved through catchment-based solutions that address diffuse actions such as bank stabilisation, improved fertiliser application and constructed wetlands.

This mechanism is a first step in trialling the application of market-based instruments to improve waterway health in Queensland.

75 – Queensland has provided benchmarking information and data to the National Performance Reports on urban water utilities, however rural water utilities did not report in 2011–12 or 2012–13.

At the time of writing the future of the national reporting is uncertain.

Queensland has reformed the regulation of urban water service providers by introducing outcomesbased legislation that will require mandatory annual reporting by service providers on a range of key performance indicators from 2014.

For providers of requisite size, this will include reporting on National Performance Report indicators.

Some urban utilities that have met the threshold for the first time in 2012–13 have indicated they will not report until required to by legislation.

An annual comparative performance report will also be published by the Department of Energy and Water Supply in collaboration with industry.

76 – The costs associated with performance and benchmarking systems are not met through recovery of water management costs.

77 – The QCA is an independent authority set up under the Queensland Competition Authority Act 1997 (Qld). Its roles in relation to the water industry are to:

1. investigate and report on the pricing practices of certain declared monopoly or nearmonopoly business activities of state and local governments
2. receive, investigate and report on competitive neutrality complaints
3. mediate and/or arbitrate access disputes and water supply disputes
4. investigate and report on matters relevant to implementation of competition policy (section 10(e) of the Queensland Competition Authority Act 1997).

**Integrated management of environmental water**

79 (i) a) – Environmental outcomes and strategies to meet those are specified in WRPs.

WRP annual reports report against the achievement of WRP outcomes, including environmental outcomes where sufficient information is available.

A more complete assessment of the achievement of environmental outcomes is undertaken as part of the WRP review and replacement process through the EFAP.

79 (i) b) – Queensland consulted directly with the Commonwealth Environmental Water Office (CEWO), NSW Government and MDBA in the preparation of its annual environmental watering priorities for 2013–14 and 2014–15.

Condition and trend is assessed through the Sustainable Rivers Audit process for the MDB.

79 (i) c) – Following the implementation of national water reforms through new state water planning processes, the New South Wales–Queensland Border Rivers Intergovernmental Agreement 2008 was reached on a range of water management issues in the Border Rivers catchment.

The agreement for the Paroo River between the NSW and Queensland governments has recently expired in 2013 with issues previously covered by this agreement now coming within the ambit of the Basin plan.

79 (i) d) – The *Water Act 2000* (Qld) requires an annual report for each WRP on implementation and the outcomes of any monitoring and evaluation activities. Ecological monitoring occurs in targeted locations under the EFAP.

The findings of the review are then incorporated into the development of a replacement WRP.

The Minister may amend a plan at any time, and must act to amend a plan if satisfied that the plan outcomes are not being achieved, or the objectives or strategies are no longer appropriate.

Queensland’s WRPs and ROPs establish water markets to promote the efficient and innovative use of water resources.

For example, water trading promotes the movement of water to high-value uses.

Water markets also can incentivise water service providers to operate schemes and associated infrastructure more efficiently.

See NWI paragraphs 91 to 92 for further information.

**Water resource accounting**

81 – Queensland has participated at a national level in the development of national water accounting standards and reporting frameworks, including the Water Accounting Conceptual Framework, the General Purpose Water Accounting Reports and the Australian Water Accounting Standards (AWAS 1 and AWAS 2).

Queensland uses AWAS 1 and the Water Accounting Conceptual Framework in providing data to the Bureau of Meteorology (BOM) for the general purpose water account.

82 – See actions associated with NWI paragraph 81.

83 – Queensland’s water accounting systems recognise connectivity between groundwater and surface water systems.

85 (i) – Queensland does not have a register of new and existing environmental water as environmental water in Queensland is largely rules based rather than incorporated into the entitlement framework.

Environmental flow objectives in WRPs and environmental management rules specified in ROPs provide the framework for ensuring environmental water requirements are met.

85 (ii) – Queensland does not produce consolidated environmental water accounts.

The EFAP is used to assess the effectiveness of the rules and strategies specified in WRPs in achieving ecological and community outcomes.

87–88 – Queensland revised its non-urban water metering policy in 2012.

For unsupplemented extractions, the policy assigns responsibility to the water entitlement holder to purchase a meter, arrange for its installation and certification, and arrange for maintenance of the meter (for all metered entitlements as defined by the Water Regulation 2002 (Qld)).

For supplemented extractions, water service providers and their clients’ metering provisions are a requirement as specified under the relevant WRP and ROP.

However, it is open to the water service provider as to whether it fulfils this requirement by ownership of the water meter or by imposing a contractual obligation on its customer to install an appropriate water meter.

89 – Queensland is participating in the development of the Environmental Water Accounting Standards through the National Water Accounting Committee.

91 (i) – The Water Efficiency Labelling and Standards (WELS) scheme is a joint initiative of the Australian and state and territory governments.

The *Water Efficiency Labelling and Standards Act 2005* (Cwth) provides the legal framework for the scheme.

Queensland has enacted complementary legislation, namely the *Water Efficiency Labelling and Standards (Queensland) Act* 2005.

91 (ii) – The Smart Approved WaterMark is a not-for-profit organisation established by four associations: the Australian Water Association, Irrigation Australia, the Nursery and Garden Industry, Australia and the Water Services Association of Australia.

It is overseen by a steering committee with representation from the Australian and state and territory governments, water utilities, the four governing associations, and the chair of the Technical Expert Panel (an independent panel which assesses applications to the scheme).

Project establishment was finalised in 2011 and a report on the delivery of the Smart Approved WaterMark was provided to the Department of the Environment.

The program continues to provide product efficiency ratings to consumers.

91 (iii) – The Queensland Water Commission ceased operations on 1 January 2013. Its policy functions moved to the Department of Energy and Water Supply (DEWS) and its planning and regulatory functions (including setting water restrictions) are now the responsibility of the new bulk water supply authority, Seqwater, and the SEQ council water businesses (distributor-retailers).

Water restrictions in place in Queensland during the previous drought period were lifted on 1 January 2013, including low-level restrictions known as ‘permanent water conservation measures’ and the requirement for large waterusing businesses to develop water efficiency management plans (WEMPs).

The amended *Water Supply (Safety and Reliability) Act 2008* (Qld) allows water service providers to impose water restrictions or require WEMPs.

The Act specifies the circumstances in which these may be imposed.

The regulator may also direct that restrictions be imposed if a significant threat to sustainable and secure water supply exists or if it is necessary or desirable to impose a restriction.

On 1 February 2013, laws mandating energy efficient hot water systems, rainwater tanks and other water savings measures were repealed.

This followed an independent cost-benefit analysis of rainwater tanks and water savings laws carried out by QCA which concluded that the costs associated with mandating rainwater tanks for new houses generally outweighed the overall benefit to the community.

The QCA analysis recognised the net benefit of compulsory rainwater tanks for new houses would vary depending on the location and current and future water demand and augmentation needs of these houses.

Therefore, the QCA recommended that local governments be able to seek approval to ‘opt in’ to the laws where they could demonstrate that opting in would result in a net benefit to the community.

91 (iv) – Management of system losses is a water service provider responsibility.

The government proposes to address system losses through a performance monitoring framework to be introduced in late 2014.

92 – The single State Planning Policy under the Sustainable Planning Act 2009 (Qld), effective December 2013, includes water quality among the state interests to be reflected in local planning instruments when making and amending local planning schemes and assessing development applications.

The state interest in water quality includes urban stormwater management, protection of water supply catchments and protection of the natural and built environment from the adverse impacts of acid sulphate soils.

The state interest seeks to ensure that urban land development is planned, designed, constructed and operated to protect the environmental values of Queensland waters.

The total water cycle management (TWCM) plan guideline was published under the Environmental Protection (Water) Policy 2009 and provides important contextual information, the statutory framework and roles and responsibilities of key stakeholders.

Local governments in South East Queensland have prepared TWCM plans.

The following are examples of urban TWCM principles being put into practice:

1. Fitzgibbon Chase in Brisbane and Coolum Ridges on the Sunshine Coast are urban development’s using stormwater and harvested rainwater
2. Rain Bank, irrigating South Bank parklands and gardens in Brisbane with captured stormwater
3. Mitchell EcoEnterprise Park on the Gold Coast, Australia’s first industrial estate that is 100 per cent selfsustaining and carbon neutral (harvests stormwater and rainwater).

The requirement for local governments to prepare TWCM and trade waste plans under environmental legislation – Environmental Protection (Water) Policy 2009 – ceased on 6 December 2013.

The legislative amendment reduces regulatory burden and advances local governments’ self-determination, accountability and transparency.

95 – The Queensland water planning framework involves stakeholder and community consultation in the development and review of WRPs and ROPs, although changes to the *Water Act 2000* (Qld) removed the requirement for compulsory formation of community advisory committees.

However, a committee (or some other community consultation mechanism or group) is still formed as the Minister considers appropriate.

This allows for more tailored consultation relevant to the particular WRP area.

Developing a WRP and ROP involves extensive formal and informal consultation.

Draft plans are published as the basis for further community input.

Consultation reports provide feedback on the issues raised and decisions taken.

Extensive consultation has been undertaken to develop pathways to return identified systems to sustainable levels of extraction.

96 – Periodic reports are published to detail the implementation of each of the state’s WRPs and assess the effectiveness of their implementation, through the ROPs, in achieving the general outcomes and specific ecological outcomes of the plans.

This includes whether each plan’s outcomes are being achieved.

For each WRP, the report includes information about changes to the plan, the number of water entitlements and figures on water use, water operations (including the impact of storage operations on downstream ecosystems), a summary of research and monitoring undertaken under the plan, and emerging compliance and operational issues.

The document reports on all WRPs across the state with a ROP in place.

97 – Structural adjustment funding assistance is provided in Queensland by several programs.

The Queensland Government is implementing the Healthy HeadWaters Water Use Efficiency project with eligible Queensland MDB irrigators with funding from the Australian Government as part of the Sustainable Rural Water Use and Infrastructure Program under the Water for the Future initiative.

In return for government funding of water infrastructure and other water saving projects, irrigators must transfer at least 50 per cent of the water savings by permanent trade of water allocation to the Australian Government for environmental use.

The funding programs run until June 2017.

Funding of $4.5 million over four years from July 2009 to June 2013 was provided to fund activities under the ClimateQ: toward a greener Queensland strategy.

The program was delivered statewide except in the South East, where the South East Queensland Irrigation Futures program operated to assist irrigators improve onfarm water efficiencies.

From July 1 2014, the Queensland Government began to implement a $2 million per year fouryear program, Rural Water Use Efficiency for irrigation Futures, to assist irrigators to improve productivity and efficiencies.

101 – Queensland supports national water science initiatives including the National Groundwater Action Plan and the National Groundwater Assessment Initiative, and is a funding partner in the National Hydrological Modelling Strategy.

It provided $20 million over five years (2007–13) for the Urban Water Security Research Alliance to address emerging urban water issues in South East Queensland with a focus on water security, reuse and recycling.

The Queensland Government managed delivery of the three-year Commonwealthfunded Healthy HeadWaters Coal *Seam Gas Water Feasibility Study* examining the opportunities and risks of using CSG water in the Queensland MDB.

26 – In its 2007 NWI implementation plan, Western Australia identified 24 areas for management under water allocation plans (WAPs).

A number of these systems included some management units identified as overallocated, which required WAPs to be completed as part of Western Australia’s commitments under the 1994 COAG Water Reform Framework.

Western Australia uses a risk-based approach to develop WAPs, whereby resources are focused in areas considered to be most at risk (see NWI paragraph 39–40 for more detail).

WAPs are currently nonstatutory and are developed to guide licensing decisions and ongoing management of the water resources.

As of June 2014, there were 22 WAPs, including two draft plans released for public comment.

Since the 2011 Biennial Assessment, the *Middle Canning surface water allocation plan* (2012), *Murray groundwater allocation plan* (2012), *Warren Donnelly surface water allocation plan* (2012), *Pilbara groundwater allocation plan (2013) and Ord surface water allocation plan* (2013) have been finalised.

Western Australia intends to release the *South West Coastal groundwater allocation plan* for public comment, as well as the final *Gingin groundwater allocation plan* in the second half of 2014.

27 – Western Australia has not implemented fully NWI-compliant legislation to provide the statutory basis for water access entitlements.

Currently the right to take (and store) water is licensed under the *Rights in Water and Irrigation Act 1914* (WA).

In September 2013 the Department of Water released *Securing Western Australia’s water future: Position paper – reforming water resource management*.

Proposed legislative amendments plan to provide for statutory WAPs and an NWI-consistent entitlement regime.

The paper sets out proposed frameworks for legislative and policy changes to water management across the state, including consolidation and revision of out-dated legislation, and the introduction of statutory WAPs.

28–33 – Water licences in Western Australia are issued under section 5C of the *Rights in Water and Irrigation Act 1914* (WA).

Water licences can be issued for the take of water from proclaimed water resources, from artesian aquifers, and in areas where the allocation limit has not been reached.

Licences can be issued above the allocation limit under some circumstances (e.g. for short-term take) and under current policy a fully-utilised licence in an overallocated system must be renewed if the licensee meets all other criteria.

Water licences are not perpetual, and have a 10year tenure.

Although they are unbundled from land, the licence components managing impacts of abstraction, works and allocation are not unbundled.

Water allocation is on a volumetric basis, and is made consistent with the WAP.

Western Australia’s *Securing Western Australia’s water future: Position paper – reforming water resource management* (2013) proposes the introduction of NWI-consistent water access entitlements where a statutory WAP is in place.

The paper notes that as these statutory allocation plans take time to develop, it is likely that it will be several years before water access entitlements are introduced.

The position paper also proposes an improved licensing regime for areas where a system of water access entitlements (WAEs) consistent with the NWI is not possible or practical to implement.

The improved licensing regime is intended to meet the principles of WAEs as far is possible.

For example longer-term licenses with fewer hindrances on trading are proposed.

34 – The *Western Australian water in mining guideline* (2013) addresses the application of NWI paragraph 34.

It cites heterogeneous fractured rock aquifers, isolation, and lack of competition for water resources as being applicable to large mineral provinces in Western Australia, such as in the Pilbara.

The key principles and processes outlined in the mining guideline also apply to petroleum and gas projects.

Western Australia has implemented a water planning process which is not fully consistent with Schedule E of the NWI, but is as far as possible within existing legislation.

It addresses the take and use of water by the mineral and petroleum sectors through water licences, WAPs, water supply planning and environmental regulation.

The water taken by mining and petroleum concerns is within the water licensing framework.

For licence applicants requiring large water volumes such as mining companies, the Department of Water requires the applicants to undertake hydrogeological investigations and develop operating strategies (which may include water monitoring requirements) to assess and manage any potential impacts on the water resource, other water users and the environment.

Statewide policies provide further guidance on specific licensing requirements.

Licensing decisions consider the allocation limits and policies set out in a WAP.

Water use by mining and petroleum industries is addressed through water licences, WAPs and water supply planning within the licensing framework.

Applicants requesting large volumes of water are required to undertake drilling investigations to assess the likely impact of their proposed operations on the environment.

Major mining projects may be facilitated under State Agreements, which are contracts between the state government and proponents of major resource projects ratified by an Act of the state parliament.

An Agreement Act provides the framework for an ongoing relationship between the proponent and the state and can override any other state legislation, except for the *Environment Protection Act 1986* (WA).

35 – The *Rights in Water and Irrigation Act 1914* (WA) provides for the identification and management of water for environmental and other public benefit outcomes.

Water for the environment is considered a nonconsumptive use and is not included in the allocation limit.

Environmental water is not held as an entitlement, but is defined as in situ water left in the system, or water that is put back in the system through dam releases or pumping.

All 22 WAPs set allocation limits. Environmental water is managed through the implementation of volumetric allocation limits and rules relating to the location of licences, trading, dam water releases and ceasetopump arrangements.

There are no actively managed held environmental water entitlements in Western Australia.

39 – Western Australia has implemented a water planning process that is consistent with Schedule E of the NWI as far as possible within existing legislation.

Western Australia uses a risk-based approach to develop WAPs, whereby resources are focused in areas considered to be most at risk.

Generally Western Australia develops allocation plans for resources where 30 per cent or more of the allocation limit is already committed.

Standard plans are developed for water resources where abstraction is between 30 and 70 per cent, and intensive plans where abstraction is more than 70 per cent.

40 (i) – Monitoring in areas where intensive water plans have been developed is much more extensive than in areas where the competition for the resource is lower.

Monitoring programs in water plans form the basis of annual plan evaluations using performance indicators and specific indicator triggers (in high value/risk areas).

40 (ii) – Knowledge improvements are able to be incorporated into the water plans through the annual evaluation cycle.

Where an evaluation shows that the plan is not meeting its objectives (through assessment of performance indicators), an adjustment of the management approach or a new planning activity may be undertaken.

40 (iii) – The Commission’s 2013 Water Planning Report Card notes that since 2012, the Department of Water has shifted to internal annual evaluations and has indicated that statements will only be published every three years unless there is significant change in water availability or management arrangements.

The statements report on resource condition, achievement of objectives, progress of investigations, actions that are needed for the implementation of future planning, and any changes to the management arrangements necessary to improve plan performance.

As of June 2014, 13 evaluation statements have been published online, with most statements covering several years of plan implementation.

Technical reports such as hydrological assessments, environmental water assessments and social and cultural reports to support future planning are also prepared and are publicly available on the Department of Water’s website.

41 – See NWI paragraph 26 for details on progress.

43–44 – Through water planning, Western Australia assesses overallocation and overuse of its water resources and then, if necessary, implements recovery pathways so as to achieve environmental and other public benefit outcomes.

Water resources are categorised from 1 to 4 based on the percentage of the allocation limit that has been allocated through the issuing of licensed entitlements and estimated exempt use.

Category 4 resources are considered to be overallocated, and water plans developed for these systems have provisions to return systems to a sustainable extraction regime, including increased licence compliance, water use efficiency measures and recovery of unused or underused allocations.

Although the current Western Australian legislation does not provide for statutory allocation limits, the introduction of statutory allocation limits has been identified as a key feature of the water planning framework proposed in the Securing Western Australia’s water future: Position paper – reforming water resource management (2013).

The Western Australian Government recognises that additional licensing tools are needed to effectively manage overallocation.

Under current legislation, the Department of Water has limited ability to readily vary entitlements within short timeframes.

Metering is generally not widely required (with the exception of Gnangara), although some progress has been made in addressing overallocation through the recovery of unused water entitlements.

Achieving the outcomes of the identified allocation and extraction regimes is still at risk, particularly in the state’s southwest, due to the pace of the drying climate trend and the lack of a timeframe for recovery.

‘Use it or lose it’ provisions under Statewide policy no. 11 (WA) have been applied (e.g. in the Lower Gascoyne) and through this mechanism progress is being made in some areas in reducing overallocation, and the potential for future overuse, by bringing entitlement levels closer to usage levels.

To help deal with stress to the Gnangara groundwater system, reductions in urban entitlements have been made by the Western Australian Government, facilitated by supply supplementation through largescale seawater desalination.

Further reductions to urban entitlements in the Gnangara groundwater system may also be achieved through managed aquifer recharge using recycled urban water, which is currently being trialled in the area.

45 – see NWI paragraph 97 for more detail.

46–51 – At present the Western Australian Government is liable to pay compensation where licensed allocations are permanently reduced, unless the reductions are ‘fair and reasonable’ in respect of other licence holders in the area.

This current arrangement means that the Western Australian Government may also be liable to pay compensation to water users for permanent cuts that may be outside its control, such as those due to climate and natural events.

52–54 – The Rights in Water and Irrigation Act 1914 (WA) does not expressly recognise Indigenous issues or engagement, and except through Local Water Resource Management Committees, provides no additional measures for Indigenous engagement.

Stakeholder engagement varies from plan to plan and is guided by the document Water allocation planning – a guide to our process (2011).

The Department of Water previously had an Indigenous Support Unit tasked with the role of (among others) undertaking Indigenous engagement, however the unit no longer exists.

Water plans consider non-consumptive water needs for Indigenous cultural benefit where relevant.

This water is that which is not allocated and therefore left in situ to meet cultural needs.

No plans provide specifically for Indigenous commercial interests, but these may be met through the licensing process or if there is a native title provision.

Western Australia advises that in most cases the protection of in situ environmental water needs protects cultural values.

However, in some instances there is a need to conduct more detailed consultation with Indigenous groups. Traditional owner groups were consulted widely with regard to groundwater-dependent cultural values, proposed allocation limits and management arrangements when developing the Pilbara groundwater allocation plan (2013).

Abstraction from the Millstream aquifer for the West Pilbara Water Supply Scheme, located in the culturally important Millstream-Chichester National Park, is managed by the Millstream-Harding Consultative Committee.

This group includes representatives of the Yindjibarndi community.

55–57 – Major intercepting activities are considered and accounted for in surface water and groundwater modelling, and incorporated into the setting of allocation limits.

Interception through stock and domestic use is sometimes determined to be minimal, but where relevant is estimated for inclusion in allocation limit decisions. Mine dewatering is also licensed and included in allocation decisions.

Types of interception and their management are outlined below:

1. On-stream farm dams: in proclaimed areas, dams for commercial purposes are licensed. In unproclaimed areas, dams are mapped and the potential interception is estimated.

The potential interception from dams for stock and domestic purposes is also estimated.

1. Domestic garden bores: interception from shallow groundwater can be significant, particularly in urban areas.

Garden bores are not licensed, but the water use is estimated and accounted for in all plans.

The Department of Water reports that it has recently completed a project to improve estimates of urban garden bore use.

1. Plantation forestry: where interception is significant, the Department of Water accounts for its water take.

In other areas, plantations are mapped and potential water take is considered.

Western Australia cannot license plantations under existing legislation, but the Department of Water advises shires where water availability is limited and plantations may affect other water users and the environment.

59 – Western Australia has a water register (The Water Register) that records both licence and water availability information.

The register is online and publicly available.

Information regarding water trading is not publicly available.

Western Australia has participated in all stages of the development of the Common Registry Solution (CRS) which will deliver the function of recording details of water rights, market information and individual water accounts, as well as transactions and dealings in relation to water rights.

Western Australia is investigating its options without the completion of the CRS.

60 – Demand for water trading in Western Australia is increasing as water resources reach full allocation.

Current trading arrangements are cumbersome, with Western Australia noting the two main restrictions as nonstatutory trading rules, and each trade requiring Ministerial approval (delegated to the Department of Water) regardless of the level of risk created by the trade.

Proposed amendments will remove some of the administrative barriers to licence transfers and water trades and simplify the process.

Generic, statewide trading rules are intended to be included in the new legislation with more specific trading rules to be included in individual WAPs.

To simplify increased efficiency in water trades, trades that are deemed to represent a low risk to the water resource will not require a full assessment – as is the case under the current *Rights in Water and Irrigation Act 1914* (WA).

66 (i) – Pricing in metropolitan areas is substantially compliant with upper-bound pricing.

66 (ii) – The Water Corporation has released an information sheet on recycled water, including pricing principles which are aligned with the NWI.

66 (iii) – The Water Corporation’s industrial waste charges (which vary by the type and load of contaminant into sewers) are set by the Western Australian Government.

These charges were reviewed by the Economic Regulation Authority (ERA) in the 2009 pricing inquiry.

The ERA considered that these charges were cost reflective and therefore appropriate.

These charges are routinely reviewed by the water utilities who may recommend annual changes to the government for consideration.

The ERA is also able to review these charges as part of their periodic pricing reviews.

66 (iv) – This reform action has been met prior to 2011.

National Guidelines for Residential Customers Water Accounts were endorsed at the 11th meeting of the Natural Resource Management Ministerial Council (NRMMC) and released on 24 November 2006 by Australian Government, state and territory water ministers.

66 (v) – The price of bulk water sold to major mining and industrial companies and some irrigation cooperatives is a contractual matter.

However, ERA pricing inquiries have established principles for efficient bulk water storage charges, including dam safety expenditure, and make recommendations on the amount of these charges.

Bulk water charges supplied to the Ord irrigation district were set by the government.

Western Australia’s four rural irrigation cooperatives pay the Water Corporation for bulk water; the prices are lower-bound and based on renewals.

Calculation of these charges is moving towards upperbound for capital expenditure (e.g. dam safety expenditure) after the legacy date, however some operating subsidies are paid where charges do not fully recoup these costs.

The total operating subsidy for rural irrigation is included in the state budget papers.

Western Australia does not impose reporting or regulation on cooperatives with regard to the charges paid to them by members.

67–68 – Western Australia does not generally pass on costs associated with water resource planning and management activities, and water resource management is therefore funded by the state government.

Some responsibility for water resource management activities is transferred to licensees through licence conditions. Although the existing legislation (Rights in Water and Irrigation Act 1914) provides the power to levy annual licence charges to recover a proportion of the costs of water allocation planning and management, the recent position paper Securing Western Australia’s water future (2013) indicates the government will not introduce cost recovery for water licences.

69 – Significant capital expenditure proposals continue to be reviewed by the Department of Treasury and are subject to sign-off by government.

The ERA examines the capital expenditure of the Water Corporation, Aqwest and Busselton Water as part of three-yearly tariff inquiries.

The Water Corporations Act 1995 (WA) requires the Water Corporation, Aqwest and Busselton Water (which were recently added to the Act) to produce strategic plans that include considerations on capital expenditure.

The Water Corporations Act 1995 (WA) has a process to develop and approve investment in new and refurbished water infrastructure.

All projects require a business case with economic, ecological and social factors evaluated.

Projects are subject to a risk-based prioritisation process to formulate the capital program.

The board oversees the approval of the program, within the constraints of the state budget process and informed by pricing considerations.

In 2013 the ERA reviewed the Water Corporation’s expenditure and found it to be efficient.

The consultants appointed by ERA concluded that the Corporation is relatively efficient compared with other water utilities.

70–72 – The allocation mechanism for the release of unallocated water is by first-infirstserved (FIFS), which means that applications to take water from a particular water resource are assessed in the order in which they are received.

The position paper Securing Western Australia’s water future (2013) proposes new legislation to allow for unallocated water to be granted by various mechanisms, including FIFS, competitive submission according to certain criteria which may not involve payment for the water, market mechanisms or other suitable means.

The method of releasing unallocated water is intended to vary across the state, taking into account the resource characteristics, the level of demand, and community and industry requirements.

The paper proposes that the community will play a role in determining suitable mechanisms (e.g. through local advisory groups).

73 – In Western Australia, licensing of take from rivers and groundwater is the main method to minimise the negative environmental externalities of using the water.

Similarly, pollution licensing and environmental approvals for treatment facilities are the main means of minimising the negative environmental externalities of wastewater treatment.

As stated in the 2011 Biennial Assessment, the ERA has considered inclusion of environmental externalities in pricing and conducted inquiries into both Recycled Water Pricing and Tariffs of the Water Corporation, Aqwest and Busselton Water.

While these inquiries discussed the use of price adjustments to reflect the value of externalities, it was not explicitly recommended and hence the government response to the inquiries did not comment on externality pricing.

However, Western Australia has advised that if evidence emerged that regulatory measures were an ineffective or inefficient means of capturing significant externalities, there could be a case for different pricing measures for recycled water or competing sources.

There are currently no recycled water projects in Western Australia with significant known water resources or wastewater discharge externalities that are not addressed by the existing regulatory regime.

75–76 – Western Australia provides benchmarking information for inclusion in National Performance Report for urban and rural utilities.

At the time of writing the future of reporting is uncertain.

77 – The ERA is Western Australia’s independent economic regulator.

The ERA reviews prices and pricing processes and provides recommendations on a periodic basis (usually every three years) to the state government, but does not have a mandate to set water or wastewater charges.

The Western Australian Government sets charges for water, sewerage and drainage services.

79 (i) a) – In Western Australia, the framework for managing environmental water is spread across a number of pieces of legislation.

These include the *Rights in Water and Irrigation Act 1914* (WA), S*tatewide policy no.5 – Environmental water provisions policy for Western Australia, Environmental Protection Act 1986* (WA) and the *Waterways Conservation Act 1976* (WA).

These arrangements make the Minister for Water responsible for the delivery of environmental water and the Department of Water the lead agency responsible for its management.

Allocation limits define the amount of water that can be taken for consumptive use after in situ environmental water needs are met.

Additional management mechanisms to achieve water regimes that meet environmental water objectives are established in WAPs.

For proclaimed water resources that are not managed under a plan, environmental water provisions can be specified through licences and their associated operating strategies.

The Commission’s 2013 *Water Planning Report Card* notes that the longer-term security for environmental water provision is at risk given the non-statutory nature of WAPs and the limitations of the tools available to recover overallocated resources under the current legislation and policy framework.

79 (i) b) – Through its water allocation planning and licensing processes, the Department of Water has established the following arrangements for the shared resources in the Ord system:

1. an environmental flow regime in the lower Ord River
2. set limits on the water entitlements to be granted from Lake Kununurra and the lower Ord River
3. limited further regulation of the Dunham River tributary to maintain the remaining natural variability of wet season flows in the lower Ord River
4. operating rules for the Ord River and Kununurra Diversion dams

79 (i) c) In Western Australia, most of the current WAPs have separately addressed surface water and groundwater due to the geographical extent of the plans and the complexity of resources within the plan areas.

Where relevant, WAPs acknowledge that groundwater and surface water are linked, and that groundwater systems are linked.

Connectivity can be calculated or estimated depending on the level of knowledge available.

Groundwater-to-groundwater connectivity between different aquifers is often a significant consideration in establishing appropriate allocation limits and monitoring impacts.

All groundwater WAPs treat connected aquifers as integrated systems.

79 (i) d) – Although there is no specific reporting on the achievement of environmental outcomes, evaluation statements for water plans report on performance against the objectives of the WAPs.

These are internal annual evaluations which will be published every three years unless there are significant changes in water availability or management arrangements.

Technical reports such as hydrological assessments, environmental water assessments and social and cultural reports to support future planning are also prepared and are publicly available on the Department of Water’s website.

79 (i) e) – In Western Australia, environmental water held by the government is rulesbased and therefore cannot be traded on the water market.

79 (i) f) – Western Australia has not undertaken a systematic statewide survey to identify high ecological value aquatic ecosystems, but relies on the development of WAPs to identify them and take into account their water requirements.

It uses existing data to identify ecological values of local, regional, national and international significance and then assesses the potential impacts on them from water extraction when developing a WAP.

As part of the Northern Australia Water Futures Assessment, a University of Western Australialed project aimed to assess the likely impacts of possible development and climate change on northern Australian aquatic ecosystems.

The project focused on three catchments in Western Australia: the Cape Leveque Coast, Fitzroy River and King Edward River.

The project’s intent was to provide new knowledge to be incorporated in the decisionmaking process for future water management plans.

79 (ii) – Western Australia uses a planned approach to environmental water, where water is left in the resource to maintain important in situ values.

To reduce overallocation on the Gnangara Mound – in particular to protect its high‑value groundwater-dependent wetlands – the largest groundwater user, the Water Corporation, has had its entitlements reduced.

The reductions have been prioritised in areas of high risk to wetlands.

Reductions to the public water supply component of abstraction on the Gnangara Mound were facilitated by the Western Australian Government’s decision to invest in desalination.

There are a number of water resources where groundwater and surface water are being recovered through the recouping of unused water entitlements.

In overallocated resources, the water is returned to the system for the environment rather than being re-released through the granting of entitlements.

**Water resource accounting**

82 – See actions associated with NWI paragraph 81.

83 – In Western Australia, water accounting systems recognise connectivity between groundwater and surface water systems.

Water accounting conducted by the Department of Water relies mostly on its own Perth Regional Groundwater Model.

This model is based on the water cycle and recognises that regional groundwater is primarily derived from surface interaction.

85 (i) – Western Australia has not yet developed an environmental water register.

Environmental water in Western Australia is rules-based and managed through the individual WAPs.

85 (ii) – In Western Australia, where environmental rules are documented in a plan, they are reported on as part of the plan evaluation process (compiled internally each year and published at least every three years).

Western Australia also provides and publishes an annual compliance report to the Western Australian Office of the Environment Protection Authority, containing information of the compliance and performance against commitments and conditions in Ministerial Statements 819 and 688 for environmental water management on the Gnangara and Jandakot mounds.

86 – As per the last assessment Western Australia has participated with other NWI parties and BOM in the development of national water accounting standards and reporting frameworks that facilitate the implementation of nationally coordinated approach to data collection and storage.

Western Australia has also participated in the development of the National Groundwater Information System.

Under the *Water Act 2007* (Cwth), BOM has been mandated to undertake a national water data and information role.

87–88 – Western Australia has contributed to the development of the National Framework for Non-Urban Water Metering (2010).

Metering is managed through Western Australia’s Strategic policy 5.03 – Metering the taking of water (2009), the state’s Metering implementation plan, and the Guidelines for water meter installation 2009.

Across the state, current licensing policy requires that privately owned meters be fitted to drawpoints associated with licences with annual water entitlements of 500 ML and over unless otherwise assessed as required.

Different thresholds may apply for trading entitlements and in other special cases and these are determined by the Department of Water.

89 (i) – The Commission’s 2013 Water Planning Report Card notes limited progress with metering, except in the Gnangara Mound.

Compliance and enforcement provisions are set out in the Rights in Water and Irrigation Act 1914 (WA) and Regulations.

Where local conditions dictate, additional compliance and enforcement measures are specified in the plan.

89 (ii) and (iv) – Western Australia has participated in the development of the National Water Market System (NWMS), which was designed to support water accounting and resource management by providing market information and assisting with the accurate recording of water entitlements and management of transactions.

A major element of the NWMS was the development of a Common Registry System (CRS), a standardised national water register that was planned to replace existing water registers in Western Australia.

The Australian Government has recently decided to discontinue funding for the NWMS, however Western Australia continues to work with other jurisdictions to evaluate where collaboration can benefit the building of a registry system in Western Australia.

**Urban water reform**

91 (i) – The Water Efficiency Labelling and Standards (WELS) scheme is a joint initiative of the Australian and state and territory governments.

The *Water Efficiency Labelling and Standards Act 2005* (Cwth) provides the legal framework for the scheme. Western Australia has enacted complimentary legislation, the *Water Efficiency Labelling and Standards Act 2006.*

91 (ii) – The Smart Approved WaterMark is a not-for-profit organisation established by four associations: the Australian Water Association, Irrigation Australia, the Nursery and Garden Industry, Australia and the Water Services Association of Australia.

It is overseen by a steering committee with representation from the Australian and state and territory governments, water utilities, the four governing associations, and the chair of the Technical Expert Panel (an independent panel which assesses applications to the scheme).

Project establishment was finalised in 2011 and a report on the delivery of the Smart Approved WaterMark was provided to the Department of the Environment.

The program continues to provide product efficiency ratings to consumers.

91 (iii) – Western Australia participated in the production of the Commission’s national review of water restrictions.

Restrictions are in place throughout the state and they prescribe how water can be used outside, including allocated watering days for lawns and gardens and the restriction of water use for outdoor cleaning purposes.

The restrictions include permanent water efficiency measures, an annual winter sprinkler ban that applies to domestic sprinkler use and some non-domestic use, and can also include extra efficiency measures and restrictions from time to time such as extensions of the winter sprinkler ban period or other restrictions.

Domestic garden bore restrictions and scheme water restrictions are imposed by the *Water Agencies (Water Use) By Laws 2010*.

These by-laws are made by the Minister for Water, with advice from the Department of Water, under the *Water Agencies (Powers) Act 1984* (WA).

The Water Corporation is on target to meet its objective of reducing water use from the 2007–08 level of 147 kL per person per year to 125 kL per person per year by 2030.

Observed reductions in residential consumption during the 2000s are largely due to a combination of a two-day-per-week sprinkler roster and conservation campaigns.

Increases in the volumetric price for water and reduced residential block sizes also played a role in influencing demand.

91 (iv) Service providers prepare asset management plans for their ERA licences which identify system losses – including leakages, pressure and flow and maintenance activities.

Western Australia reports that service providers have their own maintenance programs in place and undertake regular monitoring and implement leak detection procedures.

92 – Western Australia has participated in national level working groups and committees to develop the Australian Guidelines for Water Recycling: Managing Health and Environmental Risks which address quality guidelines for recycled and stormwater use.

Western Australia applied these guidelines through the Better Urban Water Management Manual (WAPC 2008).

It also participated in the production of the Commission’s national review of water restrictions (ISF and ACIL 2009).

New WAter Ways is a partnership between the Department of Water, Department of Planning, WA Local Government Association, Water Corporation and Urban Development Institute of Australia.

The program is a communication and capacity building vehicle for promotion of water sensitive urban design (WSUD), integrated water cycle management and water sensitive cities in Western Australia.

The objectives of the New WAter Ways program are to deliver outcomes in the areas of knowledge sharing; education, science and training; advocacy and leadership; and partnerships and bridging. The objectives are to:

1. provide easy access to best-practice and supporting WSUD information including trusted science, technical tools, current policy and existing programs
2. make WSUD ‘normal practice’ by facilitating the upskilling of WSUD practitioners to deliver bestpractice for Western Australia based on trusted and reliable science
3. provide leadership and advocacy for the adoption of best management and planning practices for WSUD in Western Australia
4. promote effective partnerships by acting as a bridging organisation for the Western Australian water sector.

**Community partnerships and adjustment**

95 – Stakeholder engagement is undertaken through a variety of formats including press releases, statements of intent, method reports, newsletters, the public release of draft plans, involvement in committees, public forums and targeted consultation.

Draft WAPs are released for public comment for a period of two to three months and formal submissions are invited.

All submissions and responses are summarised in a statement of response.

Development of the draft WAPs also contains targeted engagement of the Indigenous community.

96 – WAPs undergo regular plan evaluation to assess the effectiveness of plan implementation against its objectives.

Evaluations are generally undertaken annually and are published at least every three years.

They contain updates on allocation status, an evaluation of the status of the resource, and an assessment of how well the plan is meeting the objectives, performance indicators and actions specified in the plan.

97 – While Western Australia considers that the establishment of special government programs for monitoring or managing adjustment as a result of the NWI are not justified at this stage, it states that any need for structural adjustment will be considered on its merits, and that the merits of any case for intervention and the design of any measures will be screened through a consistent framework to ensure they do not impede the reforms.

Western Australia advises, however, that recent science indicates a continued reduction in rainfall over time which may result in reductions in water availability.

In this case adjustments to existing allocations may be required in some areas.

**Knowledge and capacity building**

101 – The Department of Water has taken several steps to address key knowledge and capacity building priorities needed to support the implementation of the NWI including:

1. participating in the development of the National Water Knowledge Platform and its implementation
2. helping with the National Groundwater Sub-Group work plan including development of the draft National Groundwater Strategic Plan and draft Guidelines for Groundwater Quality Protection

The Department of Water is an active funding partner in the CRC for Water Sensitive Cities and is actively progressing initiatives such as the Science-Policy partnership.

To set out a vision for managing and conducting the Department of Water’s science, applied research and innovation, in 2008 it published a *Science, research and innovation plan: 2008–2012.*

In 2011 the Department of Water developed a water supply planning unit and has staffed and resourced this area with the intention of supporting decision-making and reform on water resource and supply options.

**280 South Australia**

26 – At the commencement of the NWI, South Australia identified six areas where a water allocation plan was required to complete its remaining commitments on overallocated systems under the 1994 COAG Water Reform Framework (COAG 1994). Each of these areas now has a water allocation plan (WAP).

At present 19 WAPs are in operation and South Australia advises that four are under development or revision.

27 – South Australia has implemented NWI-consistent legislation.

The *Natural Resources Management (Review) Amendment Act 2013 (*SA) came into effect on 16 August 2013 and introduced a number of amendments to the water resource management process.

These amendments include increasing the maximum review period of WAPs from five to 10 years, no longer requiring concept statements to be included in the development of WAPs, and requiring additional information on water provided for the environment and intended environmental outcomes.

South Australia published a new *State Natural Resources Management Plan* in 2012.

The plan is a statutory plan under the *Natural Resources Management Act 2004* (SA) and provides high-level guidance for both Regional Natural Resource Management (NRM) Plans and WAPs.

28–33 – The *Natural Resources Management Act 2004* (SA) provides the statutory basis for NWIconsistent water access entitlements in prescribed water resources.

See NWI paragraph 26 for further information on the *NRM (Review) Amendment Act 2013* (SA).

The *Natural Resources Management Act 2004* (SA) provides for the ability to unbundle water rights, with transitional arrangements for prescribed water resources to not explicitly reflect unbundling until the relevant WAP has been amended.

The existing water licence will be unbundled into four components: the water access entitlement (water licence), water allocation, water resource works approval, and site use approval.

For certain prescribed water resources an exemption from the need for separate water resource works approvals and/or site use approvals will be considered, to avoid duplication or inconsistency between the water licence and/or water allocations and the approvals.

Water licences have been unbundled in the River Murray Prescribed Water Course.

Water licences for all other prescribed resources remain bundled, but are separate from land and tradeable under the *Natural Resources Management Act 2004* (SA).

South Australia advises that unbundling will be done for surface water, watercourses and groundwater systems where demonstrated to be feasible and of overall net benefit, in consultation with stakeholders on a case-by-case basis.

A feasibility and benefit assessment will be undertaken to determine the extent and timing of unbundling water rights for each prescribed water resource.

The process to implement unbundling will be undertaken as part of the normal WAP review and amendment cycle, subject to the outcome of a feasibility assessment.

The South Australian Government has committed to developing an accredited South Australian Murray Region Water Resources Plan by 2017 as part of the Murray–Darling Basin Plan (the Basin plan) implementation process.

This includes the introduction of unbundled WAPs for the prescribed wells areas of Mallee, Noora, Peake, Roby and Sherlock by the end of 2017.

34 – Mining and petroleum operations require a water licence where they take water from a prescribed resource.

However, in South Australia a large proportion of mines are outside of prescribed water resource areas.

Although Regional NRM Plans manage some aspects of water interception and extraction through wateraffecting activity permits, permits do not directly control volume.

Indentures also operate, for example Roxby Downs Indenture (Olympic Dam Expansion), but these are uncommon.

In March 2012, South Australia signed the National Partnership Agreement on Coal Seam Gas and Large Coal Mining Development.

Under the agreement, South Australia must refer a coal seam gas (CSG) or coal mining proposal to the Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Developments (IESC) for advice if the proposal is likely to have a significant impact on water resources, either in its own right or cumulatively with other actions.

Advice from the IESC informs decision-making on licences and conditions.

35 (i) – The *Natural Resources Management Act 2004* (SA) requires WAPs to achieve an equitable balance between social, economic and environmental needs for water.

Under section 76 of the *Natural Resources Management Act 2004* (SA), WAPs must include information such as quantity and quality, expected availability, and the type and extent of ecosystems for which environmental water will be provided.

The *Natural Resources Management (Review) Amendment Act 2013* (SA), which came into effect on 16 August 2013, expands the requirements for WAPs to include:

1. an assessment of the capacity of the resource to meet environmental water requirements
2. where practicable, information about the quantity, quality and timing of when water is expected to be made available, as well as the type and extent of ecosystems to which it is to be provided.

WAPs are required to provide a statement of environmental outcomes expected to be delivered on account of the provision of environmental water under the plan.

35 (ii) – Environmental water needs are provided for through rules, limits on extraction or managed allocations.

The *Natural Resources Management Act 2004* (SA) requires that WAPs include a statement of the environmental outcomes expected based on the provision of the environmental water allocated under the plan.

Environmental water in the South Australian Murray–Darling Basin region is made up of water:

1. allocated to South Australia through The Living Murray (TLM)
2. allocated to South Australia by the Commonwealth Environmental Water Holder (CEWH)
3. designated as Class 7 and 9 water in the WAP for the River Murray Prescribed Watercourse
4. from private donations
5. from unregulated flows.

The Basin plan sets new requirements for water resource planning, including environmental water, for Murray–Darling Basin resources.

South Australia has advised it is in the process of implementing these requirements, including identifying annual environmental watering priorities for the 2014–15 water year and commencing long‑term work on the Basin-wide environmental water strategy with the other Murray–Darling Basin jurisdictions and the Murray–Darling Basin Authority (MDBA).

In the South Australian portion of the Murray–Darling Basin, as with other Murray–Darling Basin states, environmental water is less secure at times of extremely low water availability.

Other types of environmental water, including water held under programs such as TLM, share the same level of security as consumptive uses, but are also subject to the CEWH requirements of the 2008 Intergovernmental Agreement on Murray–Darling Basin Reform.

35 (iii) – In South Australia, environmental water takes two forms: planned environmental water which is water set aside outside of the consumptive pool established within a WAP, and licensed environmental water which is set within the consumptive pool established within a WAP and is statutory based.

Only licensed environmental water is tradeable in South Australia.

Licensed environmental water can be traded on a temporary or permanent basis, subject to the provisions of the relevant WAP.

39 – South Australia has implemented a water planning process that is NWI consistent.

See NWI paragraph 26 for details on progress.

In South Australia prescription of a resource under the *Natural Resources Management Act 2004* (SA) triggers a series of actions leading to the regulation of water extraction by a licensing regime, and the development and implementation of a statutory WAP, which sets out the extraction limits and management regimes for the prescribed water resource.

The *Natural Resources Management Act 2004* (SA) is administered by the Department of Environment, Water and Natural Resources (DEWNR).

WAPs are developed by NRM boards for each prescribed water resource in their regions.

The WAPs are supported by Regional NRM plans that include goals and strategies for the integrated management of water and other natural resources.

Water resources outside prescribed areas are managed in accordance with the provisions of the relevant NRM Plan.

For example, South Australia advises that in the Alinytjara Wilurana (AW) region, the AW NRM plan was amended (July 2013) to specifically manage the issues raised by the NRM board and the community in relation to water management.

South Australia has developed a *Risk Management Framework for Water Planning and Management* (2012) that introduces a process for risk management that applies to all of the state’s water planning and management activities.

Its associated policy – *Risk Management Policy and Guidelines for Water Allocation Plans* (2012) – makes operational the framework for the management of WAP development processes.

40 – South Australia has developed the statewide *Monitoring, evaluation, reporting and improvement guidelines for water allocation plans*, which guide the development and review of plan objectives.

NRM boards produce annual reports that provide a general update on progress with WAP development or implementation as part of a broader Regional NRM Plan.

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46–51 – South Australia has adopted an alternative risk-assignment framework in accordance with NWI paragraph 51.

The Natural Resources Management Act 2004 (SA) enables the Minister to make reductions to water licences under certain circumstances, primarily when a WAP is revised and less water is available for consumptive use under this revised plan.

Licences can be altered to be consistent with the current WAP.

52–54 – The South Australian water allocation planning framework engages Indigenous communities, along with other stakeholders, to identify their water values and requirements through the WAP consultation process.

Section 79 (6)(a) of the Natural Resources Management (Review) Amendment Act 2013 (SA) requires that anybody who represents the interests of Aboriginal people, as identified by the Minister, must be consulted during WAP preparation.

The Natural Resources Management Act 2004 (SA) states that regional NRM board members should have experience and knowledge of Indigenous heritage and interests in land and water.

One NRM board in South Australia (Alinytjara Wilurara) is wholly made up of nine Indigenous members, reflecting the fact that more the half the region is held as dedicated Indigenous lands.

Several WAPs (including the Mallee, Tatiara and Padthaway prescribed wells areas) allow unlicensed access and use for social, cultural and spiritual purposes, provided the flow of water is not diverted or impeded for collection.

In September 2012, a Notice of Authorisation to Take Water for Native Title Purposes was published in the South Australian Government Gazette.

This provides for the taking of water for the purpose of satisfying personal, domestic, cultural, spiritual or non-commercial communal needs and occurs in the exercise or enjoyment of native title rights and interests.

This Notice of Authorisation is in effect an expression of section 207 of the Natural Resources Management Act 2004 (SA) which states that ‘Nothing done under this Act will be taken to affect native title in any land or water’.

55–57 – The South Australian system is based on prioritisation then regulation through the water planning process for priority interception activities.

The system is a regulatory approach to major interception activities and is supported by policy instruments which recognise interception activities as ‘water affecting activities’.

Assessment of the risk to resource of relevant interception activities is undertaken in WAP development.

Sustainable extraction limits are set under the WAP’s water account for current and projected volumetric impacts of interception activities.

High-impact plantation forestry expansion in the lower south-east is currently managed under development regulation, which broadly takes account of forestry impacts on water resources.

The interception risk of plantation expansion is identified in WAPs.

An amendment to the Natural Resources Management Act 2004 (SA) (NRM (Commercial Forests) Amendment Act 2011 (SA)) in 2011 provides for commercial scale plantations to acquire either a licence or permit for groundwater interception volumes, depending on the significance of the impact to the water resource, and consistent with the relevant NRM Plan or WAP.

Forest water licensing has been incorporated in the Lower Limestone Coast WAP, while forestry permits are incorporated in the Western and Eastern Mount Lofty Ranges WAPs and the Kangaroo Island Regional NRM Plan.

The impact of dams and bores is managed in non-prescribed water resources under the policy for managing water‑affecting activities in NRM Plans.

Where a surface water system is prescribed, the impacts of dams are accounted for in the relevant WAP.

Farm dam development is subject to management zone sustainable capacities which drive dam density and consumptive use restrictions.

Farm dam development is subject to consumptive use limits and diversion limits at the local or catchment scale, which drives dam density and consumptive use restrictions.

Farm dams can require construction permits including capacity and management provisions.

Stock and domestic water is taken into account, but impacts are estimated because stock and domestic use is generally not metered (although extraction in some high-demand areas is licensed).

Stock and domestic bores require a permit for construction and can also require licensing in prescribed areas.

Other diversions and extractions are metered where possible, or estimated through land use and water use surveys and modelling.

Managed aquifer recharge from the capture, storage and reuse of stormwater has significantly increased and will be managed as part of the licensing system in prescribed resources.

**Water markets and trading**

59 – In South Australia, DEWNR manages the registration and administration of water access entitlements and water trades through the Water Information and Licensing Management Application (WILMA).

WILMA records information about water access entitlements, allocations and site use approvals, work approvals and usage.

Information about water permits, licences, allocations and approvals is publicly available through the South Australian Water Register.

South Australia is continuing with the development of the Common Registry Solution which will deliver the function of recording details of water rights, market information and individual water accounts, as well as transactions and dealings in relation to water rights.

Inter-operability has been established to provide the automated exchange of information between South Australia and other states for allocation trades.

With the termination of the National Water Market System (NWMS) project, South Australia has advised that it is investigating the potential for inter-operability of systems for other trades.

60 – South Australia temporarily suspended water allocation trading for a week at the end of March 2012 to protect its entitlement flow for the following year in response to carryover arrangements introduced in Victoria and Victoria’s suspension of allocation trade in late 2011–12.

South Australia states that the need for states to suspend River Murray water allocation trade arises partly from the provisions of the 2008 Intergovernmental Agreement on Murray–Darling Basin Reform.

These limit the water storage space available to each state, and for South Australia, require water allocation trades processed and accounted for between 1 April and 30 June in one water year to be delivered in the following water year.

No restrictions on interstate trade have been imposed since 2012, however South Australia advises that the suspension of water allocation trade into or out of South Australia, or a volumetric limit on trade, will be considered if South Australia identifies an unacceptable risk to their entitlement flow.

63 – Interstate entitlement trade using tagging is available in South Australia, although takeup continues to be slow.

Interstate allocation trade continues to be active between the various connected trading zones in NSW, Victoria and South Australia.

In 2012–13, 79,519 ML of water allocation was traded out of the state, and 1,004,098 ML was traded into South Australia (representing an increase of 98 per cent compared with 2011–12).

The 4 per cent limit, or any other limit on trade out of an irrigation district, is not applied in South Australia.

The Irrigation Act 2009 (SA) and the Renmark Irrigation Act 2009 (SA) provide that an irrigation trust is not able to restrict permanent trade of water out of its network and must facilitate trade both in and out of a trust network at the request of its members in accordance with the Water Act 2007 (Cwth).

The Commission has coordinated a number of reviews and evaluations of the effectiveness of the Australian water market.

For example, 63 (vi) is specifically addressed by the Commission’s Impacts of trade reports, and 63 (vii) is considered to have been satisfied by the 2009 Biennial Assessment.

**Best practice water pricing and institutional arrangements**

65 (i) – South Australia has implemented consumption-based pricing in both rural and urban systems. See NWI paragraph 66 below for further detail.

65 (ii) – See discussion for NWI paragraph 66.

65 (iii) – Progress has been made towards achieving more consistent pricing practices across jurisdictions in the Murray–Darling Basin to promote efficient water trade through the ACCC’s regulatory functions under the *Water Act 2007* (Cwth).

The Essential Services Commission of South Australia (ESCOSA) is conducting an inquiry into pricing reform for the water and wastewater services sector.

66 (i) – SA Water uses a two-part tariff system with prices consisting of a fixed (supply) charge and a volumetric (water usage) charge, which rises with consumption under a three-tier inclining block structure.

66 (ii) – SA Water has developed a Pricing Policy Statement Recycled Water and Stormwater for 2014–15. SA Water sets prices for its recycled water and stormwater schemes consistent with ESCOSA’s principles and the NWI pricing principles.

A water use charge for dual reticulation (residential) is applied which is 90 per cent of the firsttier drinking water price.

66 (iii) – SA Water has developed a Trade Waste General Policy (2013) which outlines the system SA Water uses to regulate, accept and manage trade waste.

The policy states that SA Water applies charges on a userpays basis to companies that exceed certain minimum standards.

66 (iv) – This reform action was completed prior to 2011.

National Guidelines for Residential Customers Water Accounts were endorsed at the 11th meeting of the Natural Resource Management Ministerial Council (NRMMC) and released on 24 November 2006 by Australian Government, state and territory water ministers.

66 (v) (a) and (b) – ESCOSA, the state’s independent industry regulator, is conducting an inquiry into water pricing reform, which includes an examination of statewide pricing.

The South Australian Government will consider any recommendations on statewide pricing when ESCOSA presents its final report, which is due by the end of 2014.

66 (v) (c) – SA Water receives a Community Service Obligation (CSO) from the South Australian Government for the provision of water services in regional areas at metropolitan water prices.

The CSO subsidy is reported publicly on SA Water’s website.

67–68 – South Australia reports there are no specific licensing arrangements to recover water planning and management costs, however water planning and management costs are recovered partially by:

1. The NRM water levy – legislated and governed under the Natural Resources Management Act 2004 (SA), this levy is applicable to all water entitlement holders and some authorised users.

The levy is directly attributable to the relevant Regional NRM Plan and the funds are spent in the region in which they are raised.

The levy is based on quantity of water allocated, and activities supported by the charge are clearly articulated on DEWNR’s website

1. The Save the River Murray levy – payable by SA Water customers (excluding those entitled to concessions) as part of water rates.

The amount a customer is required to pay is determined based on property type, and all levy amounts are paid into the Save the River Murray Fund held by the Minister (SA).

Annual reports are tabled in Parliament and are publicly available on the DEWNR’s website Water licence fees.

These water charges are identified and listed on the DEWNR’s website.

However, the approach is not systematic and not all charges are clearly linked to specific water planning and management activities.

The South Australian Minister for Water and the River Murray has directed SA Water to continue to contribute to water planning and management charges under section 6 of the Public Corporations Act 1993 (SA).

The Initial Pricing Order requires that any determination of the ESCOSA must allow SA Water to recover the cost of water planning and management charges.

The Commission’s Cost recovery for groundwater planning and management in Australia, Waterlines report no.

88 (2012) notes that in South Australia, the government funds a large proportion (if not all) of groundwater planning and management costs and there is limited reliance on user charges.

69 – Investment decisions by South Australian Government agencies are guided by the Treasurer’s Instructions and the Guidelines for the evaluation of public sector initiatives (1998).

Under the South Australian Government’s financial management framework, all projects over $4 million must be scrutinised by the Public Works Committee of the South Australian Parliament.

Future investments and capital projects are assessed by both SA Water and ESCOSA as part of South Australia’s three-yearly revenue determination under the Water Industry Act 2012 (SA).

70–72 – South Australia’s Unallocated Water Policy was endorsed by the Minister for Sustainability, Environment and Conservation in July 2013. The policy sets out a preferred process for issuing water licences to access unallocated water and seeks to ensure unallocated water is made available for consumption in a fair and equitable manner.

It provides a definition of unallocated water and a process for its identification, and outlines a preferred process for issuing licences to access unallocated water.

73 – South Australia uses a regulatory approach to manage environmental externalities.

For example, under the Lower Limestone Coast Water Allocation Plan (2013), water licences will be introduced to address both direct extraction and interception of recharge by forestry plantations.

South Australia continues to manage environmental externalities through salinity management zoning in the River Murray region.

Through the River Murray Salinity Zoning Policy (2005), the potential for further irrigated agriculture is maintained by limiting the level of water use in high-salinity impact areas.

It also promotes development in areas where the impact on salinity is less or where it can be negated by salt interception schemes.

Refer to NWI paragraphs 67–68 for a discussion on pricing mechanisms for the South Australian MDB.

75 – South Australia has provided benchmarking information for inclusion in National Performance Report for urban and rural utilities.

At the time of writing the future of this reporting is uncertain.

76 – Costs associated with operating performance and benchmarking systems are funded by SA Water.

77 – ESCOSA is the independent economic regulator for water and wastewater services across the state.

Under the Water Industry Act 2012 (SA), the South Australian Government has conferred additional functions to the ESCOSA such as licensing and price regulation.

ESCOSA made its first pricing determination in May 2013, setting maximum allowed revenues for drinking water and sewerage retail services for the three-year period from 1 July 2013 to 30 June 2016.

On the 24 September 2012, the Treasurer of South Australia tasked ESCOSA to undertake an inquiry into pricing reform for drinking water and sewerage retail services provided by SA Water.

ESCOSA is due to submit its final report by 31 December 2014.

**Integrated management of environmental water**

79 (i) a) – The *Natural Resources Management Act 2004* (SA) provides the statutory framework for managing environmental water in South Australia. Regional NRM boards are responsible for developing statutory WAPs that include environmental water provisions.

79 (i) b) – The *Natural Resources Management Act 2004* (SA) requires both WAPs and Regional NRM plans to address and be consistent with intergovernmental agreements.

South Australia is party to a number of joint arrangements where resources are shared between jurisdictions including:

1. Lake Eyre Basin Intergovernmental Agreement 2000
2. Intergovernmental Agreement on Implementing Water Reform in the Murray–Darling Basin 2013
3. the 1985 Border Groundwaters Agreement (updated 2005).

79 (i) c) – South Australia reports that resources have not historically been managed conjunctively due to the limited understanding of the connectivity between key surface and groundwater resources.

However, more recently WAPs have begun to adopt an integrated management approach as understanding of the resource develops.

The WAPs prepared for Eastern and Western Mount Lofty Ranges show greater consideration of surface and groundwater connectivity, including placing minimum caps on available recharge required to provide for environmental water requirements.

Section 76(4)(a.ii) of the *Natural Resources Management Act 2004* (SA) also requires consideration of connectivity in WAPs, whereby the plan must assess whether taking or using water from the resource will have a detrimental effect on the quality or quantity of water that is available from any other water resource.

South Australia reports that all WAPs identify connectivity between surface water and groundwater systems, even if the focus of the individual plan is on one resource.

79 (i) d) – Although some WAPs outline extensive monitoring and reporting programs, most generally focus on baseline monitoring for ecological values.

Water quantity and quality are often measured in conjunction with these monitoring programs, aiming to assess the upper and lower limits required to maintain ecological function.

The Monitoring, Evaluation, Reporting and Improvement (MERI) guidelines for South Australian WAPs were released in December 2012.

The guidelines identify risk-based approaches to water planning to enable a focus on where it is most needed.

The 10-year review cycle for WAPs is the mechanism for evaluating and reviewing environmental water arrangements.

Adaptively managed environmental water is reviewed more frequently as part of the TLM program.

No periodic independent audit is currently undertaken.

(i) e) – In South Australia, environmental water takes two forms: planned environmental water which is water set aside outside of the consumptive pool established within a WAP, and licensed environmental water which is set within the consumptive pool established within a WAP and is statutory based.

Only licensed environmental water is tradeable in South Australia.

Licensed environmental water can be traded on a temporary or permanent basis, subject to the provisions of the relevant water allocation plan.

1. f) – South Australia has identified priority high ecological value aquatic ecosystems (HEVAEs) across the state.

The WAP is the mechanism for providing specific arrangements for the maintenance of HEVAE values.

Environmental watering requirements for those ecosystems are considered during the development of related water allocation plans.

1. South Australia has adopted a mix of approaches to achieve environmental and other public benefit outcomes in stressed areas.

See NWI paragraphs 43–44 for more detail on water recovery measures.

**Water resource accounting**

81 – South Australia has participated at a national level in the development of national water accounting standards and reporting frameworks, including the Water Accounting Conceptual Framework, the General Purpose Water Accounting Reports and the Australian Water Accounting Standards (AWAS 1 and AWAS 2).

South Australia uses AWAS 1 and the Water Accounting Conceptual Framework in providing data to the Bureau of Meteorology (BOM) for the general purpose water account.

82 – See actions associated with NWI paragraph 81 above.

83 – South Australia’s water accounting systems recognise connectivity between groundwater and surface water systems.

85 – In South Australia a water account has been established for the management of environmental water trades within and into South Australia from TLM, CEWH and non-government organisations. A water licence and account has also been established for management of South Australian Government held environmental and wetland water.

The Riverine Recovery Program is providing funding to develop a Management Action Database with the capacity to record all trades and accounting of environmental water.

The database is expected to be operational in late 2014. It allows for the recording of water accounting transactions, as well as planned and actual environmental water transactions so that allocations can be planned and tracked.

Use and outcomes of held environmental water for the South Australian River Murray is reported publicly through the River Murray Environmental Watering Report, produced annually by the South Australian Government.

Outside of the Murray–Darling Basin, only some sections of rivers below major reservoirs report environmental water.

Other types of environmental water provisions are reported in disclosure notes as part of the National Water Account for BOM.

Environmental water provision notes have been provided for several areas in the Adelaide region for the National Water Account.

South Australia is participating in the development of the Environmental Water Accounting Standards through the Australian Water Accounting Committee.

86 – South Australia has participated with other NWI parties in the development and implementation of BOM’s AWAS 1 (see NWI paragraph 81 for more detail).

87–88 – South Australia has contributed to the development of the National Framework for NonUrban Water Metering (2010).

South Australia has developed the South Australian Licensed Water Use Metering Policy (2012), which sets out the statewide policy for metering licensed water in South Australia.

It includes the South Australian Licensed Water Use Meter Specification (2012).

89 – South Australia participated in the development of the NWMS, which was designed to support water accounting and resource management by providing market information and assisting with the accurate recording of water entitlements and management of transactions.

This project has now ceased. A major element of the NWMS was the development of a Common Registry System (CRS), a standardised national water register that was planned to replace existing water registers in South Australia.

South Australia contributed to and was fully supportive of the final system architecture developed by the CRS project.

Funding for the build and the implementation of the CRS ceased on 1 July 2014.

South Australia is currently investigating options to progress the design and implementation of the CRS.

**Urban water reform**

91 (i) – The Water Efficiency Labelling and Standards (WELS) scheme is a joint initiative of the Australian and state and territory governments.

The *Water Efficiency Labelling and Standards Act 2005* (Cwth) provides the legal framework for the scheme.

In 2006 South Australia enacted complimentary legislation, and in 2013 the updated legislation, the *Water Efficiency Labelling and Standards Act 2013* (SA).

91 (ii) – The Smart Approved WaterMark is a not-for-profit organisation established by four associations: the Australian Water Association, Irrigation Australia, the Nursery and Garden Industry, Australia and the Water Services Association of Australia.

It is overseen by a steering committee with representation from the Australian and state and territory governments, water utilities, the four governing associations, and the chair of the Technical Expert Panel (an independent panel which assesses applications to the scheme).

Project establishment was finalised in 2011 and a report on the delivery of the Smart Approved WaterMark was provided to the Department of the Environment.

The program continues to provide product efficiency ratings to consumers.

91 (iii) – South Australia participated in the production of the Commission’s national review of water restrictions, published in 2008.

Water conservation, demand management and improved water availability throughout South Australia have resulted in water restrictions being eased for most of the state from 1 December 2010 and Water Wise Measures coming into place.

Areas previously subject to permanent water conservation measures, including the state’s south‑east and Kangaroo Island, are now covered by Water Wise Measures.

The new measures also apply to customers in Whyalla and Port Pirie.

Penalties apply for non-compliance.

91 (iv) – The South Australian *Water for Good Action Plan* contains Action 29, for SA Water to include leak detection in the water auditing process of the Business Water Saver Program, and Action 38, for SA Water to continue its program of leak detection and repair in its metropolitan and major country town networks and report annually on progress.

A major leak detection and repair program covering Adelaide and a number of regional areas was completed in 2011.

South Australia reports that during 2012, SA Water continued to refine the quality and coverage of its leakage measurement methodology and commenced a research project with the University of Adelaide and the Goyder Institute to assess the contribution of on-property leakage to the overall water balance calculation.

In 2012 SA Water finalised a Leak Analysis and Water Profiling Service, which is available for customers to access for a fee.

92 – South Australia has participated in national level working groups and committees to develop the Australian Guidelines for Water Recycling: Managing Health and Environmental Risks (2009) which address water quality guidelines for recycled and stormwater use.

South Australia has developed the South Australian Recycled Water Guidelines (2012) which adopt the Australian Guidelines for Water Recycling (2009) for scientific guidance.

The guidelines provide information on the approval process in South Australia, including appropriate agencies, legislative requirements and the steps involved in obtaining approval.

The South Australian guidelines cover various recycled water sources including sewage, greywater, roof run‑off and stormwater.

In November 2012, South Australia published the Water Sensitive Urban Design – Creating more liveable and water sensitive cities in South Australia.

The policy outlines statewide water sensitive urban design (WSUD) targets, details the South Australian Government’s role in supporting the uptake of WSUD, provides a pathway for supporting WSUD within South Australia’s planning and environmental protection legislation and details other state commitments to support WSUD.

South Australia is also supporting current research by the Goyder Institute to better understand issues and impediments to WSUD uptake in South Australia, and is a partner in the CRC for Water Sensitive Cities’ research program.

**Community partnerships and adjustment**

95 – South Australia has statutory consultation requirements as part of the review and subsequent amendment process for WAPs under the *Natural Resources Management Act 2004* (SA).

Amendments to the *Natural Resources Management Act 2004* (SA) in 2012 require regional NRM boards to give public notice of any decision to proceed to prepare a draft WAP.

In addition, non-statutory consultation processes are undertaken with specific stakeholder and industry groups across regions.

Regional NRM boards are responsible for managing the consultation processes within the particular region.

South Australia’s *Water for Good* requires the preparation of regional water demand and supply plans to assess the state of a region’s water resources and the extent of supplies available within that region, as well as to assess current and future demand for water in the region.

Demand and supply plans have recently been prepared for the Eyre Peninsula, Northern and Yorke Peninsula, Alinytjara Wilurara and the South Australian Arid Lands NRM regions.

The manner of engagement and consultation with the community and industry varies from region to region, including the need to take into account concurrent or previous consultation processes.

Regional NRM boards have the autonomy to determine the appropriate level of community engagement and consultation required for their particular region.

96 – South Australia’s Water Connect is an online, publicly accessible resource which provides communities and industry with contemporary and real-time water information on a number of issues including water licences, permits, allocations, wells and water trade.

In addition, information is made available through fact sheets, reports, and technical and scientific documents such as:

1. Water for Good annual report and progress reports
2. regional supply and demand statements
3. groundwater and surface water status reports.

97 – The South Australian Government has invested $20 million in the Riverland Sustainable Futures Fund to deliver structural changes, investment and employment outcomes in the region.

The Private Irrigation Infrastructure Program for South Australia funds irrigation infrastructure efficiency improvements for MDB operators in South Australia, with a share of the water savings achieved from those projects to be used for environmental water purposes.

The program is part of the Sustainable Rural Water Use and Infrastructure component of the Australian Government’s Water for the Future.

In exchange for funding, successful applicants transfer water entitlements to the CEWH to use for environmental water purposes.

The South Australian River Murray Sustainability program was launched in 2013 and is a $265 million funding package to support regional economic and environmental sustainability through two programs – the Irrigation Industry Improvement Program ($240 million) and the Regional Economic Development Program ($25 million).

The programs are being delivered by Primary Industries and Regions South Australia.

The Regional Economic Development Program will invest in specific programs to support regional and industry related research and development.

**Knowledge and capacity building**

101 – In South Australia, the Goyder Institute for Water Research provides water research and expert advice to support priority state government water policy development and water security needs for South Australia.

Through its research themes of Urban Water, Environmental Water, Water for Industry and Climate Change, it is working in partnership with CSIRO, Adelaide University, Flinders University, the University of South Australia, SARDI and the Australian Water Quality Centre (SA Water) to deliver science capacity.

South Australia is participating in the National Knowledge and Research Platform to prioritise research programs and to coordinate cost-effective research across jurisdictions, to facilitate access to research outcomes to support NWI implementation.

South Australia is also participating in the National Hydrological Modelling Strategy to standardise its surface water hydrologic models in the ‘Source’ platform to be consistent with the national water modelling platform.

The aim is to provide model compatibility and consistency across jurisdictions, which provides underpinning science for the preparation and implementation of statutory water management plans consistent with the NWI principles.

**298 Tasmania**

26 – Tasmania has not identified any systems as overallocated.

In its 2006 NWI implementation plan Tasmania committed to developing plans for the Meander River including the Liffey River; the Macquarie River including the Elizabeth and Tooms rivers; the Jordan River; and Coal River.

Of these, one plan is currently in draft, the *Macquarie River Catchment Water Management Plan* (WMP) and the other rivers are not covered by plans.

Tasmania has advised that water planning activities will be progressed in 2013–14 in the state’s north-west, including the Duck, Welcome and Montague river catchments.

In addition, Tasmania intends to develop management frameworks for a range of catchments including the Meander, Jordan, Coal and Forth rivers.

WMPs are prepared under the *Water Management Act 1999* (Tas) and are the responsibility of the Department of Primary Industries, Parks, Water and Environment (DPIPWE).

DPIPWE prepares WMPs where an area has been identified as requiring a higher level of management due to greater resource development.

At present nine WMPs are operational with a 10th, the South Esk plan, to be implemented following the 2013–14 irrigation season.

WMPs are currently in draft for the Macquarie River and Ringarooma River catchments.

DPIPWE expects approximately 15 WMPs will be required and it is not intended the whole of Tasmania be covered by plans.

Areas not yet covered by WMPs are managed under the provisions of the *Water Management Act 1999* (Tas).

27 – The *Water Management Act 1999* (Tas) provides for the planning, regulation, management, protection and allocation of Tasmania’s freshwater resources.

It provides the statutory basis for water access entitlements.

28–33 – The *Water Management Act 1999* (Tas) provides for NWI-consistent water entitlements. Entitlements to water are provided through water licences, upon which water allocations are endorsed.

Water licences are valid for 40 years and may specify the surety with which a water allocation can be expected to be available for taking.

WMPs establish allocation limits in accordance with a determination of the catchment’s sustainable yield.

In most instances, Tasmania uses a rule of thumb allocating a 20 per cent proportion of the yield for consumptive purposes.

Most plans define allocation limits for both the summer/direct-take and winter/storagetake periods.

WMPs establish rules of access to water resources in the plan area.

These provisions include allocation limits, restriction measures for surface water and groundwater, minimum lake levels and triggers for review of licensing arrangements if use reaches what the plans’ term as unsustainable levels (e.g. groundwater, stock and domestic).

Under Part 5 of the *Water Management Act 1999* (Tas), owners and occupiers of land may take dispersed surface water and groundwater from the land for any purpose without a water licence, except where this will cause environmental harm or contravenes licensing provisions specified in a WMP or under an appointed Groundwater Area.

Groundwater is considered in the development of WMPs through a hydrological assessment of groundwater and associated risks in the plan area.

New plans make allowance for a review to determine the need for groundwater licensing should significant growth in extraction occur.

The Minister for Primary Industries and Water (Tas) may appoint an area as a Groundwater Area as a mechanism to bring groundwater extraction under a regulatory regime.

The purpose of a Groundwater Area is to define specific areas where groundwater resources are intensively used and commercial groundwater licensing is required to equitably and sustainably manage the water resource.

DPIPWE has developed a regulatory framework for groundwater management and a system for the licensing of groundwater extraction to be implemented in highpriority areas and situations.

Tasmania’s first Groundwater Area, the Sassafras Wesley Vale, was appointed in 2012 as part of the *Sassafras Wesley Vale Water Management Plan* (2012).

It requires that all commercially extracted groundwater be licensed.

The *Great Forester Water Management Plan* (2003) states that the department will implement a groundwater licensing system within the first five years of the plan (by 2008) with licence conditions covering reporting of water usage and drilling records, however this has not been done and Tasmania advises of no plans to do so in the near future.

Hydro Tasmania holds a special licence which grants it the right to all water resources in hydroelectric districts, with the exception of water for town use, stock and domestic, resource-dependent ecosystems and allocated under water licences to other users.

While under section 112 of the *Water Management Act 1999* (Tas) Hydro Tasmania must comply with a WMP only if its licence conditions are amended to state this, the development of WMPs by DPIPWE is undertaken is consultation with Hydro Tasmania to ensure alignment between special licences and WMPs.

Licensed water access entitlements under the *Water Management Act 1999* (Tas) are property rights, separated from land titles and able to be mortgaged and traded.

Water entitlements in irrigation districts, including those managed by Tasmanian Irrigation, are issued as irrigation rights under the *Irrigation Clauses Act 1973* and are tradeable within the district in which they are issued.

34 – As with any other party, mines are required to have a licence under the *Water Management Act 1999* (Tas) to take water from a water resource.

All water licences in Tasmania are issued for a period of 40 years with provision for reassessment of licence conditions every five years.

These licences are tradeable.

Groundwater take does not require a licence unless specified under a WMP or a Groundwater Area.

35 – The *Water Management Act 1999* (Tas) requires water plans to include a statement of environmental (and other) objectives, a description of the water regime that best gives effect to environmental (and other) objectives and an assessment of the ability of the regime to achieve those objectives.

Environmental water is provided through allocation limits (annual maximum volumes available for extraction) and rules under which flows can be accessed.

Mechanisms such as cease-to-take provisions are used to maintain baseflows under low-flow conditions.

Environmental water has a higher level of surety than all consumptive uses other than critical human needs and stock and domestic, however there are no licences held for environmental purposes.

The *Water Management Act 1999* (Tas) requires WMPs to identify ecosystem water requirements, water management rules and any likely detrimental effects resulting from water extraction.

Important freshwater ecosystem values are identified through the state’s Conservation of Freshwater Ecosystems Values (CFEV) project and new water plans are supported by a range of detailed environmental studies.

In some cases, Hydro Tasmania undertakes voluntary releases of environmental flows, which are overseen by DPIPWE to integrate with water management of the plan area.

Even though the *Water Management Act 1999* (Tas) makes specific provision for both entitlement and rulesbased environmental water, water resources in Tasmania are largely unregulated and environmental water is rulesbased.

Provisions in WMPs establish the amount of water that can be allocated at various surety levels, taking into account the plan’s objectives and the water regime necessary to achieve them, existing water use and the sustainable allocation limits derived for the plan area.

Limiting allocation to a 20 per cent proportion of the yield is considered by Tasmania to provide a conservative ‘rule of thumb’ approach.

WMPs contain rules-based restriction levels to ensure minimum lake levels and maintain healthy ecosystem function.

Thresholds are also set that trigger a requirement for in-stream dams to pass inflows and ceasetotake measures to maintain minimum environmental flows during drought or low-flow periods.

In appointed Groundwater Areas, groundwater thresholds trigger restriction management actions to preserve levels to sustainable limits.

The *Water Management Act 1999* (Tas) allows for the trade of environmental water allocations, but because environmental water in Tasmania is currently rules based, trade is not possible.

39 – Tasmania has implemented a water planning process which is NWI consistent.

Plans are prepared in accordance with the Water Management Act 1999 (Tas) using the Standard Operating Procedures for the Development of Statutory Water Management Plans in Tasmania (SOPs), which were revised in March 2010 and guided by Tasmania’s Generic Principles for Water Management Planning (2009).

40 – Specific performance indicators for WMP objectives are not defined, however plans specify that their performance will be assessed and reported on annually.

The annual reporting is to be based on whether a plan’s provisions include the intended streamflow conditions in relation to its objectives or, in the more recent plans, the effectiveness of its water management provisions in achieving its environmental and water usage and development objectives.

Some plans specify an annual report to the Minister while others specify only that the department will report annually.

Data in relation to flow, groundwater monitoring and compliance is publicly available through the online Water Information System Tasmania (WIST), which offers limited interpretive ability against plan objectives.

41 – See NWI paragraph 26 for detail on progress.

43–44 – At present no water systems in Tasmania are considered overallocated.

Several plans indicate that catchments are approaching full allocation or are fully allocated for the direct-take season.

A number of plans, such as that for Ansons River, indicate that if and when allocation limits are approached in the future, further assessment work will be undertaken to review allocation limits in light of new scientific, environmental and climate knowledge.

The key mechanisms in Tasmanian WMPs for managing water resources within sustainable levels are setting annual extraction limits and daily access rules.

The draft Ringarooma River Catchment WMP includes a trigger for implementation of irrigator water sharing arrangements, in which irrigators selfmanage temporary sharing arrangements for their licensed water to avoid the need for system-level cease-totake provisions.

Although no water recovery is undertaken in Tasmania, management mechanisms are being implemented in some systems with medium levels of competition.

The focus of water management is to identify and set appropriate limits and hydrologic regimes to preserve catchment condition, provide for further development and ensure systems do not become overused in the future.

Several WMPs have identified the availability of further water allocations after setting a sustainable extraction limit and a hydrologic water regime.

New allocations are mostly designated as potential winter take when higher flows are available, to minimise environmental risk to the water resource during the summertake period (e.g. in the Tomahawk River Catchment WMP).

Groundwater use is prevalent and increasing in some areas (e.g. north and north-west).

The extraction of groundwater for commercial purposes is currently only licensed in the Sassafras Wesley Vale appointed Groundwater Area.

As noted at NWI paragraphs 28–34, the statement included in the *Great Forester Water Management Plan* (2003) that groundwater for uses other than stock and domestic will require a licence by 2006 has not been implemented.

Groundwater levels are monitored in most catchments and several plans make allowance for the status of groundwater to be reviewed if extraction increases to unacceptable levels (i.e. draft Ringarooma and Macquarie WMPs, and South Esk, Tomahawk, Lakes Sorrel and Crescent, Little Swanport and Clyde WMPs).

Reduced rainfall and surface water flows experienced in recent years, together with increased demand for irrigation water, has led to a greater reliance on groundwater extraction in the Sassafras Wesley Vale system.

This led to the appointment in 2012 of the Sassafras Wesley Vale Groundwater Area as part of the *Sassafras Wesley Vale Water Management Plan* (2012).

Licences have now been issued for taking groundwater in this area.

45 – See actions associated with NWI paragraph 97 for more detail.

46–51 – The *Water Management Act 1999* (Tas) notes that allocations may be reduced and that compensation may be paid to licence holders.

Tasmania advises that it is working towards implementing updated riskassignment arrangements from 1 January 2015, which would specify the risk-sharing provision between licence holder and government.

52–54 – Tasmania has neither legislative provisions that require Indigenous water access issues to be dealt with in its water planning processes, nor any provisions for the recognition of native title rights to water.

No water plans in Tasmania identify water requirements for Indigenous customary, social or spiritual needs or provide water specifically to Indigenous people for any purpose.

There are no specific requirements for Indigenous engagement in the development of WMPs, beyond general stakeholder engagement.

55–57 – Farm dams are regulated, with all dams greater than 1 ML and all watercourse dams requiring a dam works permit.

A permit is required for well development, along with a well driller’s licence – which provides the ability to estimate stock and domestic use of groundwater more accurately.

A Water Availability and Forest Landuse Planning Tool (WAFL) was developed by DPIPWE in partnership with the Forest Practices Authority.

It provides a tool for assessing the potential impact of plantation forestry on catchment water yield and contributes modelled interception data to new water plans.

The CSIRO Tasmania Sustainable Yields Project, undertaken in 2009, assessed a range of regions on current and likely future extent and variability of surface water and groundwater resources.

**Water markets and trading**

59 – Under the *Water Management Act 1999* (Tas) the Minister must keep a register of all licences and permits granted.

Where a licence is transferred, or a water allocation of a licence is transferred, the Minister must record in the register such particulars as he or she thinks fit relating to the transfer.

Water access entitlement information is currently available through WIST, an online graphical search that allows customers to use a map of Tasmania to find basic water licence information within a catchment.

Detailed licence information can be requested from the DPIPWE through a manual process for a nominal fee.

60 – The current development of irrigation schemes will result in more areas which are able to trade entitlements and allocations.

63 – Not applicable to Tasmania.

**Best practice water pricing and institutional arrangements**

65 – Consumption based pricing is in place for metropolitan and rural customers, however the lack of metering in some locations means that not all consumers are charged on a usage basis (see comments against NWI paragraph 88).

All urban water is metered and priced according to a regulated twopart tariff system.

Prices are set in accordance with state legislation and are consistent with the NWI pricing principles.

Tariff reform arrangements aim to achieve full cost recovery in 2020.

There is little trading across sectors in Tasmania.

Where urban water is used for irrigation, it is purchased at the water service provider’s commercial tariff.

Similarly, where urban water is sourced from a nonpriceregulated commercial water user, it is likely to be priced at the supplier’s opportunity cost.

66 (i) – TasWater commenced operating on 1 July 2013 and was formed through the amalgamation of the three Tasmanian regional water and sewerage corporations.

TasWater committed through the Price and Services Plan 2012–2015 to transition customers receiving a regulated service onto a pricing structure which ultimately recovers the cost for providing the service.

The Tasmanian Economic Regulator identified the need to start the price reform process as a priority to transition customers to defined target tariffs and ensure appropriate recovery of capital expenditure.

For the first regulatory period, 1 July 2012 to 30 June 2015, ‘target tariffs’ (prices) were set that will begin to move customers towards the real cost of providing the services.

The Tasmanian water and sewerage sector has recently adopted two-part tariffs (comprising a service availability charge and a service usage charge) that meet the sustainability threshold, but significant legacy issues remain and thus upper-bound pricing has not been achieved to date.

It is intended that cost-reflective upperbound pricing will be fully implemented by the end of the transition period, in 2020.

The Water and Sewerage Industry Act 2008 (Tas) enables price and service plans and price determinations not to apply some of the pricing principles during the transition period.

The Water and Sewerage Industry Act 2008 (Tas) also provides for an additional revenue limit to those prescribed under the NWI, the statutory revenue limit.

The statutory revenue limit is the amount of revenue required to achieve the level of cost recovery stipulated in the Water and Sewerage Industry Act 2008 (Tas).

Prices may be charged to the extent that it is commercially and technically reasonable, to reflect at least the costs that are directly attributable to the provision of the regulated service.

66 (ii) – Recycled water customers are required to enter into a formal Recycled Water Agreement with TasWater.

The agreement details legal arrangements such as infrastructure ownership and recycled water pricing.

Each recycled water property must also have a site-specific Irrigation and Environmental Management Plan detailing recycled water management, and how the recycled water will be used in a manner that is safe and sustainable.

Pricing of recycled water varies between each scheme.

Tasmania advises that future pricing strategies will reflect the principles of least‑cost effluent disposal.

Stormwater services are the responsibility of local government.

Rates to fund the provision of these services are set by each local government council.

66 (iii) – The Price and Services Plan 2012–2015 includes pricing for the provision of trade waste services.

Trade waste charges reflect the costs for management of trade waste including collection, transportation and treatment.

Charges are based on the discharge category and the level of risk associated with the acceptance of a customer’s trade waste to the wastewater network.

66 (iv) – The National Guidelines for Residential Customers Water Accounts were endorsed at the 11th meeting of the Natural Resource Management Ministerial Council (NRMMC) and released on 24 November 2006 by Australian Government, state and territory water ministers.

66 (v) – Water charges for some of the existing Tasmanian irrigation schemes include an asset renewal levy to maintain the continuing service capacity of the schemes for the foreseeable future.

It is unclear how this approach is linked to lower-bound pricing calculations.

Tasmanian Irrigation Pty Ltd was established on 1 July 2011.

Its ongoing operating costs, including provision for asset renewal, are met by annual charges levied on water entitlement holders.

A Community Service Obligation (CSO) exists in the urban water and sewerage sector to avoid perverse pricing outcomes and fees are subsidised in the rural sector to encourage development.

Any shortfall between the revenue required to achieve cost recovery from water users and the total costs recovered through water charges is reported.

Urban water CSO amounts are reported publicly in the Tasmanian Economic Regulator’s annual report on the state of the urban water and sewerage industry and also in the urban utilities’ National Performance Reports.

67 – The urban water sector does not directly recover water planning and management costs but Tasmania applies specific fees and charges under the *Water Management Act 1999* (Tas) and related regulations.

Fees and charges are independently assessed under the *Subordinate Legislation Act 1992* (Tas) to determine whether or not a regulatory impact statement is required in relation to the costs of the proposed fees.

These fees and charges typically increase in line with the Consumer Price Index.

A review of the costs of water planning and management activities under the *Water Management Act 1999* (Tas) has recently been undertaken, in line with the NWI pricing principles and the Tasmanian Government’s pricing policies.

The Minister for Primary Industries and Water is considering the findings of the review, which includes an analysis of the full costs borne by DPIPWE, the attribution of costs to the government and water users on a beneficiarypays principle, and the costs currently recouped in undertaking water planning and management activities in Tasmania.

68 – Cost recovery is not yet reported for planning and management.

69 – As part of the due diligence assessment process for Commonwealth Water for the Future funding for the development of modern and efficient irrigation in Tasmania, the Australian Government assesses each business case submitted for funding to ensure it is technically feasible and financially viable and complies with both Tasmanian and Australian Government environmental legislation.

Tasmanian Irrigation Pty Ltd requires that all schemes it constructs are economically viable and environmentally sustainable.

70–72 – Generally, WMPs identify additional volumes of water available for further allocation, primarily during the winter period.

Hydro Tasmania holds a special licence which grants it the right to all water resources in hydroelectric districts, not including any rights to water held by other parties (e.g. Part 5 rights and rights under a water licence).

Under these arrangements the water rights in several catchments are fully committed.

To enable further allocations for consumptive uses, Hydro Tasmania may agree to transfer the rights to discrete volumes of water to other users which become part of the allocation framework.

Unallocated water in irrigation areas is released through market mechanisms.

73 – There has been little progress in implementing externality pricing in Tasmania.

Tasmania notes such pricing is not appropriate at present, given the absence of fully developed pricing regulatory arrangements.

Instead, Tasmania uses regulatory mechanisms to address externalities.

In irrigation schemes, for example, water rights’ holders must have a farm water access plan as condition of water use.

TasWater sources water through the same licensing system as other water users in Tasmania, and is subject to the same regulatory mechanisms that are in place to address environmental externalities.

Environmental externalities are not specifically considered in the Tasmanian Economic Regulator’s price determination.

75 – Tasmania had provided benchmarking information for inclusion in the National Performance Report for urban water service providers.

At the time of writing the future of this reporting is uncertain.

The Tasmanian Economic Regulator is also required to report annually on the performance of the Tasmanian urban water and sewerage sector.

76 – Tasmania has not been required to report on rural (irrigation) service provision to date.

77 – Tasmania has one urban water and sewerage service provider, TasWater.

It is subject to price regulation in the delivery of urban reticulated water and sewerage services by the Tasmanian Economic Regulator under the provisions of the Water and Sewerage Industry Act 2008 (Tas) and associated regulations.

In 2012 the Tasmanian Economic Regulator produced the 2012 Water and Sewerage Price Determination Investigation – Final Report which contains the regulator’s decisions on pricing, customer service standards and cost recovery.

TasWater also provides some services that are not subject to price regulation.

These include water for irrigation, re‑used water and stormwater services provided via a combined sewerage/stormwater system.

In the rural sector there is one state-owned irrigation company that supplies irrigation water in a nonprice regulated environment.

Other irrigation ventures operate on a collective basis.

**Integrated management of environmental water**

79 (i) a) – The *Water Management Act 1999* (Tas) provides the statutory framework for environmental water in Tasmania.

These arrangements give DPIPWE responsibility for the delivery of environmental water.

Under the *Water Management Act 1999* (Tas), water can be allocated to the environment as an entitlement or under a rules-based system.

Through managing consumptive use under WMPs or licence conditions, water is provided for the environment.

79 (i) b) – Does not apply to Tasmania.

79 (i) c) – Surface water and groundwater are defined in the *Water Management Act 1999* (Tas) and their connectivity is explicitly recognised. WMPs are required to identify interconnectivity and dependencies between surface water and groundwater in a catchment.

In the absence of data, surface water and groundwater are considered to be highly connected.

A *Draft Framework for Integrated Management of Groundwater and Surface Water in Tasmania (Discussion Paper)* was released in 2011 but has not been finalised.

79 (i) d) – Tasmania does not currently undertake periodic independent audit, review or public reporting of the achievement of environmental and other public benefit outcomes.

79 (i) e) – Environmental water in Tasmania is provided for in WMPs as planned environmental water.

In Tasmania, planned environmental water is not tradeable on the temporary market.

79 (i) f) – In Tasmania, high conservation value freshwater ecosystems are those considered especially representative of their type while also demonstrating high degrees of naturalness.

Tasmania employs the Conservation of Freshwater Ecosystems Values (CFEV) assessment to determine environmental values and identify the conservation management priorities of those values – as part of developing WMPs.

This provides information on the water needs of high-value ecosystem assets.

The CFEV assessment is also used by DPIPWE to determine areas of interest for environmental flow studies, dam assessment reports and natural value assessments.

DPIPWE has also developed the Tasmanian Environmental Flows Framework to provide information on the environmental water requirements for particular catchments to inform WMP development.

79 (ii) – Tasmania has not identified overallocation within the state and so does not employ any measures for water recovery, though the *Water Management Act 1999* (Tas) provides for reduction in allocations under a WMP in order to meet environmental objectives.

81 – Tasmania has participated at a national level in the development of national water accounting standards and reporting frameworks, including the Water Accounting Conceptual Framework, the General Purpose Water Accounting Reports and the Australian Water Accounting Standards (AWAS 1 and AWAS 2). Hydro Tasmania implemented a pilot project to trial the AWAS.

82–83 – Tasmania does not currently prepare water accounts.

85 (i) – Environmental water in Tasmania is rules based and therefore Tasmania does not have an environmental water register.

Under the Water Management Act 1999 (Tas) the Minister may determine that a water allocation of a licence is to be used only for a specified purpose, which can be environmental (although none have been created at this stage).

If created, the details of the licence would be entered onto the WIST register.

85 – (ii) – Given the unregulated nature of most Tasmanian catchments, Tasmania uses a rules based approach to achieve environmental outcomes, rather than providing a specific water access entitlement for the environment.

Environmental outcomes are not reported on, although ongoing streamflow, groundwater levels and some water quality data are available on WIST.

Tasmania has advised that it intends to commence publicly available reporting on water regime outcomes.

Tasmania has not progressed development of a framework for reporting on significant rulesbased environmental water.

86 – See actions associated with NWI paragraph 81.

87–88 – Tasmania has participated in the development of national water metering standards and reporting framework.

The Tasmanian Metering Project, partially funded by the Australian Government, achieved practical completion at the end of June 2012.

Reticulated urban water supply to customers that is regulated under the Water and Sewerage Industry Act is fully metered.

In rural areas to date, extraction has generally not been metered except in specific circumstances (e.g. for transitional allocations in the draft Ringarooma WMP area, where metering is required for at least two years to make decisions about ongoing allocations).

Some WMPs mandate the use of meters for specified types of extraction.

The level of metering is determined by DPIPWE, but more developed catchments generally have the highest levels of metering.

A draft policy for rural water metering is being progressed for consideration by the Tasmanian Government during 2014.

89 – Tasmania is participating in the development of the Environmental Water Accounting Standards through the National Water Accounting Committee.

Tasmania has agreed to implement the National Framework for Non-urban Water Metering (2010).

**Urban water reform**

91 (i)—The Water Efficiency Labelling and Standards (WELS) scheme is a joint initiative of the Australian and state and territory governments.

The *Water Efficiency Labelling and Standards Act 2005* (Cwth) provides the legal framework for the scheme.

Tasmania has enacted complementary legislation.

91 (ii) – The Smart Approved WaterMark is a not-for-profit organisation established by four associations: the Australian Water Association, Irrigation Australia, the Nursery and Garden Industry, Australia and the Water Services Association of Australia.

It is overseen by a steering committee with representation from the Australian and state and territory governments, water utilities, the four governing associations, and the chair of the Technical Expert Panel (an independent panel which assesses applications to the scheme).

Project establishment was finalised in 2011 and a report on the delivery of the Smart Approved WaterMark was provided to the Department of the Environment.

The program continues to provide product efficiency ratings to consumers.

91 (iii) – Tasmania participated in the production of the Commission’s national review of water restrictions.

The state’s single water and sewerage corporation, TasWater, is responsible for the management of water and wastewater services, including the enforcement of water restrictions.

Usually there are no water restrictions for domestic consumption in Tasmania.

TasWater reserves the option to enact water restrictions when storages become critically low due to unforeseen operational issues or due to drought conditions.

Restriction management is based on flow-volume triggers and lake levels.

When in force restrictions can include limiting garden watering times and equipment, car washing etc.

92 – Tasmania has participated in national level working groups and committees to develop the Australian Guidelines for Water Recycling: Managing Health and Environmental Risks (2009) which address water quality guidelines for recycled and stormwater use.

A stormwater harvesting and reuse project has been implemented at Derwent Park.

This has the capacity to replace more than 1.5 billion litres of reticulated drinking water a year by supplying industrial and urban irrigation needs from harvested stormwater supplemented with groundwater.

**Community partnerships and adjustment**

95 – The *Water Management Act 1999* (Tas) requires WMPs to be developed in collaboration with stakeholders.

This includes public notification of plan development and public release of the draft plan for comment for at least 60 days.

Consultation for most plans has included public forums to explain planning aspects and scientific reports.

The consultation process also includes the establishment of a consultation group to contribute to plan development.

A secretary’s report responds to all public submissions on draft plans, indicating the adoption of amendments.

Review of the secretary’s report is undertaken by the Tasmanian Planning Commission to determine whether a hearing is required and to prepare a public report of recommendation.

Standard operating procedures for the development of WMPs set out guidelines for the consultation process.

While plans are reviewed and or amended in accordance with the specifications of each individual plan, the same consultation requirements apply as for developing a new plan.

Where the only amendments to the plan are for consistency with any relevant state policy, the same consultation is not required.

In this circumstance, the secretary must publish a copy of the proposed amendments in a local newspaper together with a notice inviting members of the public to provide written representations and considers all written representations received.

96 – Under section 45 of Water Management Act 1999 (Tas), during August in each year and at any other time when so required by the Minister, a responsible water entity must provide the Minister with a written report on its administration of a WMP during the preceding period of 12 months.

There is no requirement for the reports to be publicly available and the report is not required to cover progress against meeting plan objectives.

Until 2008, annual waterway monitoring reports provided regular information on catchment hydrology, water allocations and ecological health.

Annual effectiveness reporting is a requirement of WMPs, however Tasmania advises that annual reports are no longer produced.

A range of monitoring data (e.g. stream flow) is available online through the WIST in real time, although this provides only limited interpretation against plan objectives.

97 – Under the Water Management Act 1999 (Tas) the holder of a prior right that is abrogated as a result of the development of a WMP is entitled to compensation for any liability incurred or loss sustained unless it is necessary to achieve the water objectives in the plan or the holder consents to the abrogation or reduction.

Most Tasmanian water resources have low to medium levels of development.

Consequently, no active water recovery is required to be undertaken.

Tasmania advises that structural adjustment is not a significant issue, hence little consultation or monitoring in relation to structural adjustment has occurred.

101 – Tasmania has participated in national research identification and prioritisation and knowledge sharing forums in relation to the urban water sector.

To support NWI implementation and recognise the current and future impacts of climate change on rural and urban sectors, the Tasmanian Government has initiated the Climate Futures for Tasmania project.

Climate Futures interprets climate projections at a local scale between 1961 and 2100, for use by state and local governments, industry and communities.

It assesses how water will flow through Tasmanian water catchments under different climate scenarios and evaluates specific climate indicators most important for key agricultural productivity.

Tasmania has undertaken two key projects that underpin flow regime and ecosystem decisions in water planning.

One of the key planning tools for provision of environmental water is the CFEV database. Commencing in 2002, it provided a statewide audit and conservation evaluation of Tasmania’s freshwater-dependent values, mapping and categorising rivers, estuaries and wetlands according to their relative condition and conservation value.

Important freshwater ecosystem values are recorded in the CFEV database, which is used by multiple Tasmanian organisations as a common basis for prioritising natural resource management activities.

The Tasmanian Environmental Flows (TEFlows) project was designed to allow learnings from one catchment area to inform management decisions in other similar catchment types.

It assessed the critical flow dependencies of ecological assets in catchments of varied hydrology and improved confidence that the environmental flow provisions established in WMPs would replicate the natural flow regime as far as possible.

**313 Australian Capital Territory**

**Water access entitlements and planning framework**

26 – At the commencement of the NWI, the Australian Capital Territory was not required to complete any commitments related to the development of water plans for overallocated systems under the 1994 COAG Water Reform Framework. Currently, the ACT has one water planning area and the water plan for this area is complete.

The Australian Capital Territory reports that it has no overallocated water systems.

27 – The *Water Resources Act 2007* (ACT) provides the statutory basis for water access entitlements in the Australian Capital Territory.

The Water Sharing Plan is in subordinate legislation and comprises two disallowable instruments: DI 193 describes water management areas and DI 191 details the volume of surface water and groundwater that can be taken from each water management area.

The Australian Capital Territory’s long-term strategy, the *ACT Water Strategy 2014–44: Striking the Balance*, guides development, integration and implementation of management plans prepared by water service providers and agencies involved in activities and works in the catchment, as well as planning and development agencies operating within the Australian Capital Territory and region. It uses a 30-year planning horizon with provisions for reviews every five years.

28–33 – The Australian Capital Territory has implemented NWI-consistent legislation through the *Water Resources Act 2007* (ACT), which provides the statutory basis for water access entitlements in the Australian Capital Territory.

34 – Although the Australian Capital Territory has not defined how it will implement NWI paragraph 34, there are no major mining activities currently occurring or likely to occur within the Australian Capital Territory.

The Australian Capital Territory has advised that mining activities are currently prohibited under the Australian Capital Territory’s *Territory Plan* (2009).

35 (i) – The Water Resources Act 2007 (ACT) is the legal basis for managing water in the Australian Capital Territory.

Under the Act, the Environmental Flow Guidelines are a statutory instrument to determine the water necessary to maintain the health of aquatic ecosystems.

The Australian Capital Territory’s Environmental Flow Guidelines were reviewed in 2011 and re-enacted in early 2013.

The Australian Capital Territory provides water for the environment before water for consumptive use.

The Australian Capital Territory reports that it has cooperated with arrangements for the Basin plan’s environmental watering regime where applicable.

35 (ii) – Water for the environment and other public benefit outcomes is ‘rules based’ and provided via instream flows.

However, in the Australian Capital Territory portion of the Murray–Darling Basin, as with other Basin states, environmental water is less secure at times of extremely low water availability.

The 2008 Intergovernmental Agreement on Murray–Darling Basin Reform states that Critical Human Water Needs are the highestpriority water use for communities dependent on Murray–Darling Basin water.

The Australian Capital Territory reports that more than half the annual historic average amount of water it has paramount rights to – some 494 GL – is allocated to the environment.

The remainder is available for consumptive uses. ACTEW holds a licence for 65 GL per year, which is 33 per cent of the available water after environmental flow allocation, and about half of this is returned to the Murray–Darling Basin via the Molonglo River after treatment at the Lower Molonglo Water Quality Control Centre (Review of Think water, act water: the ACT’s long term water strategy 2012).

35 (iii) Water for the environment in the Australian Capital Territory cannot be traded on the water market.

39 – The Australian Capital Territory has implemented water planning processes that are NWI consistent.

The Australian Capital Territory reports that it has no overallocated water systems.

The Australian Capital Territory has one water planning area and the plan for this area is complete.

40 (i) and (ii) – The Australian Capital Territory monitors the performance of its water plan and has adaptive management systems in place.

40 (iii) – The Australian Capital Territory produces an annual ACT Water Report which provides information on the state of the water resources and water resource management in the Australian Capital Territory.

41, 43–45 – The Australian Capital Territory reported that it has no overallocated water systems.

The Australian Capital Territory has operated within the extraction limits agreed under the Murray–Darling Basin cap process since 1998, and usage levels to date have been well within the cap.

A new Sustainable Diversion Limit (SDL) for the Australian Capital Territory and a timeframe for its implementation have now been set by the Murray–Darling Basin Plan (the Basin Plan).

The new lower limit also allows for water returned to the system and makes a contribution to the shared reduction amount designed to improve environmental outcomes in the lower reaches of the Murray River system.

46–51 – Although the Australian Capital Territory has no risk-assignment policy in place, the Australian Capital Territory partially addresses the assignment of risk where reductions to water allocations arise from seasonal or long‑term changes in climate.

The Australian Capital Territory states that as it provides water for the environment as a priority, any reductions in environmental flows would be reflected in an increase in water available for water entitlement holders.

52–54 – The Australian Capital Territory has statutory requirements to consult all stakeholders, including Indigenous groups, in the development of water plans and to identify their water values and the water requirements to maintain them.

The Australian Capital Territory has actively engaged Indigenous communities through the development of the Australian Capital Territory’s water resource plan, currently being prepared as required by the Basin plan.

55–57 – Interception activities, such as unlicensed basic landholders’ rights, are identified in the Australian Capital Territory water sharing plan and there has been some consideration of the impact of forest regrowth on water supplies after bushfire.

The installation of rainwater tanks and farm dams is regulated.

The water planning process in the Australian Capital Territory requires estimates of unaccounted intercepted water within the water plan area, but it does not require the activity or location to be explicitly identified.

At present the Australian Capital Territory is not undertaking further reform to improve the capacity to manage interception activities, as current policies and legislation are consistent with managing existing activities.

The Australian Capital Territory generally has limited interception activities as the region is small and most activities are regulated.

Stock and domestic bores require a licence and are generally metered.

Plantation forestry was previously a potential interception issue, however after the 2003 bushfires the amount of commercial forestry in the Australian Capital Territory has reduced significantly with no new plantations being introduced.

Farm dams above 2 ML and/or on a waterway require licensing, and rainwater tanks are regulated under the Water Resources Act 2007 (ACT).

59 – The Australian Capital Territory Government’s Environment and Planning Directorate maintains an online register of water access entitlements, water allocations and water licences.

60 – The Australian Capital Territory has legislative and regulatory frameworks in place for facilitating water trading both between water management areas in the Australian Capital Territory and interstate.

To permit crossborder trading of allocations involving the Australian Capital Territory and New South Wales, an agreement is required between the two jurisdictions, however such an agreement is still not in place.

Therefore water trading in the Australian Capital Territory is currently restricted to intrastate entitlement trade.

The Australian Capital Territory advises that it is currently working with the Murray–Darling Basin Authority (MDBA) and New South Wales to develop and implement these interstate water trading arrangements.

65 – The Australian Capital Territory has implemented its commitments under the 1994 COAG Water Reform Framework to bring into effect pricing policies for water storage and delivery in rural and urban systems.

66 (i) – Upper-bound pricing of water storage and delivery has been achieved in the ACT.

66 (ii) – The Australian Capital Territory advises that pricing policies for recycled water and stormwater are in the final stages of development.

The number of sites in the Australian Capital Territory is small with the only stormwater reticulation system a model/demonstration site which the Australian Capital Territory advises has a limited potential market.

The pricing methodology has been reviewed by the Independent Competition and Regulatory Commission, however the licensing system is yet to be finalised.

The Australian Capital Territory advises that recycled water is provided by the water utility from the main treatment plant on a very limited basis, and is priced at a high relative price to potable water pricing.

Recycled water has also been made available at the Lower Molonglo Water Quality Control Centre free of charge.

The water is available for commercial use and assisting in maintaining public areas during the Australian Capital Territory’s permanent water conservation measures.

66 (iii) – Pricing policies for trade waste are still being finalised by ACTEW Water.

Trade waste in the Australian Capital Territory is limited and site specific and mainly confined to grease traps associated with restaurants and food production.

66 (iv) – National Guidelines for Residential Customers’ Water Accounts were endorsed at the 11th meeting of the Natural Resource Management Ministerial Council (NRMMC) and released on 24 November 2006 by Australian Government, state and territory water ministers.

66 (v) – Full cost recovery for the storage and delivery of rural surface and groundwaterbased systems has been achieved in the Australian Capital Territory.

67–68 – Water management and planning costs have been recovered since 1995 through the Australian Capital Territory’s Water Abstraction Charge (WAC).

69 – In the Australian Capital Territory all investment in new or refurbished infrastructure is subject to a triple bottom line analysis and can be referred to the Independent Competition and Regulatory Commission (ICRC) for an assessment of its economic viability and environmental sustainability.

70–72 – Unallocated water is only released in the Australian Capital Territory when the water plan identifies that part of the consumptive pool has not been granted to an entitlement or licence.

For potential new stormwater harvesting and reuse projects, the water must be accounted for and the proponent will be required to obtain a water licence or an authorised specified exemption from a licence and pay a WAC.

73 – Environmental externalities are generally recovered through the Australian Capital Territory’s WAC.

The WAC has several components, including environmental costs related to provision of the water supply, environmental management and protection of the aquatic environment and the riparian zones of the Australian Capital Territory’s streams and lakes.

75 – The Australian Capital Territory has provided benchmarking information and data for the National Performance Reports on water utilities.

At the time of writing the future of reporting is uncertain.

76 – The costs for preparation of the National Performance Reports in the Australian Capital Territory are borne by the Australian Capital Territory Government and are not passed on the water utility.

77 – The ICRC is the independent statutory industry and pricing regulator in the Australian Capital Territory.

It includes public consultation and submission processes in its proceedings.

**Integrated management of environmental water**

79 (i) a) – The statutory framework for environmental water in the Australian Capital Territory is provided by the:

1. *Water Resources Act 2007* (ACT)
2. *Statutory Environmental Flow Guidelines 2013*
3. *Territory Plan 2008 – Planning and Development Act 2007* (ACT)
4. *ACT Planning Strategy* (2012).

These arrangements give the Australian Capital Territory Environment Protection Agency (EPA) the responsibility to achieve set environmental water objectives.

The environmental flow restrictions in the Australian Capital Territory ensure that 55 per cent of water that flows through the Australian Capital Territory is not available for consumptive use and that water is given to the environment before it is taken for consumptive use.

79 (i) b) – The Australian Capital Territory has established management and institutional arrangements to contribute to achieving environmental and other public benefit outcomes for resources shared with other jurisdictions, including the:

1. Intergovernmental Agreement on Implementing Water Reform in the Murray–Darling Basin 2013
2. Intergovernmental Agreement on Murray–Darling Basin Reform 2008
3. Memorandum of understanding for the planning and management of cross-border water resources 2006
4. TLM partnership of the Commonwealth, New South Wales, Victorian, South Australian and ACT governments (while there are no TLM icon sites within the ACT, the ACT has provided funding for the initiative)
5. *Lake Burley Griffin Action Plan* (Aug 2012) – a joint plan between the Australian Capital Territory Government, National Capital Authority, Queanbeyan City Council, Palerang Council and ACTEW Water.

79 (i) c) – The surface water and groundwater systems of the Australian Capital Territory are considered to be highly connected and as a result surface water and groundwater are generally managed as one water resource.

The Environmental Flow Guidelines (ACT) recognise the highly connected nature of surface water and groundwater in the ACT, and the contribution of groundwater to baseflow in drier conditions.

79 (i) d) – The Australian Capital Territory EPA undertakes compliance and monitoring of all licensed water extractions, as well ongoing monitoring and assessment of environmental flows.

The EPA also conducts fiveyearly strategic reviews of the Environmental Flow Guidelines, which establish the components of flow required to maintain stream health.

79 (i) e) – Environmental water in the Australian Capital Territory is rules based and cannot be traded.

79 (ii) – The Australian Capital Territory reports that there are no overallocated systems in the Australian Capital Territory and therefore no water recovery activities have been required.

**Water resource accounting**

81 – The Australian Capital Territory has participated at the national level in the development of a range of national water accounting standards and reporting frameworks, including the General Purpose Water Accounting Reports and the Australian Water Accounting Standards (AWAS 1 and AWAS 2).

The Australian Capital Territory uses AWAS 1 and the Water Accounting Conceptual Framework to provide data to the Bureau of Meteorology (BOM) for the general purpose water account.

82 – The Australian Capital Territory reports that unlike other states, the Australian Capital Territory uses ‘net’ extractions to account for water use.

This is because the Australian Capital Territory returns 55 per cent of water used back to the Murray–Darling system, as discussed in NWI paragraph 79 (i) a).

The Australian Capital Territory contributes to the National Water Account and there is a specific National Water Account for the Canberra region.

The Australian Capital Territory and ACTEW provide relevant data to BOM as required.

83 – The Australian Capital Territory recognises groundwater/surface water connectivity in water planning, management and data collection.

It has three connectivity categories for water access entitlements: surface water, groundwater, and surface water and groundwater (formally ‘mixed’ entitlements).

‘Surface water and groundwater’ entitlements assume 100 per cent groundwater-surface water connectivity.

85 (i) – As the Australian Capital Territory does not have environmental water entitlements, an environmental water register is not required.

85 (ii) – Under the *Water Resources Act 2007* (ACT) compliance with the delivery of environmental water is undertaken through assessment of compliance and licence conditions by the EPA.

Compliance reports are not publicly accessible, however limited reporting of environmental watering is included in the annual *ACT Water Report*.

86 – The Australian Capital Territory has continued to participate in nationally coordinated efforts in the development of national water accounting standards and reporting frameworks that facilitate data collection and storage at the national level.

87–88 – The Australian Capital Territory has contributed to the development of the Australian Government’s *National Framework for Non-Urban Water Metering* (2010).

One hundred per cent of licensed extraction is metered in the Australian Capital Territory.

Stock and domestic use of surface water is not metered.

89 – The Australian Capital Territory has participated in the development of a range of national reporting requirements for water management.

The Australian Capital Territory provides data and information for the production of the National Performance Reports for rural and urban water utilities, the Australian water markets (89 (ii)) and environmental water management report series (89 (iii)), and are working with other NWI parties on compliance and reporting arrangements for water metering (89 (i)).

**Urban water reform**

91 (i) The Water Efficiency Labelling and Standards (WELS) scheme is a joint initiative of the Australian Government and the state and territory governments.

The *Water Efficiency Labelling and Standards Act 2005* (Cwth) provides the legal framework for the scheme.

The Australian Capital Territory is participating in the amendments to WELS legislation enacted by the Commonwealth.

In 2005 the Australian Capital Territory enacted complementary legislation, the *Water Efficiency Labelling and Standards Act 2005*.

(ii) The Smart Approved WaterMark is a not-for-profit organisation established by four associations: the Australian Water Association, Irrigation Australia, the Nursery and Garden Industry, Australia and the Water Services Association of Australia.

It is overseen by a steering committee with representation from the Australian and state and territory governments, water utilities, the four governing associations, and the chair of the Technical Expert Panel (an independent panel which assesses applications to the scheme).

The Commonwealth supported the scheme with a grant from the Water Smart Australia program administered by the Department of the Environment.

(iii) The Australian Capital Territory has a four-stage scheme of water restrictions which is enacted when water supplies are scarce and reductions in water use are required.

Permanent water conservation measures are in place when the ACT is not in a drought situation as determined by a range of criteria, in particular dam storage levels and pending weather conditions.

ACTEW finalised a review of the permanent water conservation measures and temporary water restrictions in 2012.

The review included consultation with Canberra residents, businesses and industry, and a legal and economic analysis of the proposed amendments to the schemes was also undertaken.

92 – The Australian Capital Territory Government is reviewing the Water Sensitive Urban Design Code (WSUD) which was introduced in 2009 under the Territory Plan.

The code is designed to encourage reduced use of mains water, improve water quality and manage stormwater flows in urban areas.

The review is examining current WSUD practice under the code, considering options to significantly expand available WSUD options and provide maximum flexibility and innovation to developers for implementing WSUD.

The Environment and Planning Directorate has implemented the Canberra Integrated Urban Waterways project, which aims to reduce potable water use by providing a reticulation stormwater use scheme.

The project has developed integrated waterway management plans for stormwater capture and reuse, treated effluent recycling and distribution, aquifer storage potential, water quality management, and drainage and flood management (which included rehabilitation of wetland habitats and recreational areas). It is being implemented as a pilot study.

**Community partnerships and adjustment**

95 (i) – There are no reported overallocated systems in the Australian Capital Territory and therefore no consultation is required for the determination of water recovery activities in the Australian Capital Territory.

95 (ii) – The Australian Capital Territory produces an annual *ACT Water Report*, which is available online. The reports contain information on the status of water resources in the Australian Capital Territory, water quality, and research and community activities.

The *Water Resources Act 2007* (ACT) requires the ACT EPA to consult when developing the Environmental Flow Guidelines.

Consultation was also undertaken in developing *ACT Water Strategy 2014–44*: *Striking the Balance*, and included seven community consultation workshops across Canberra, meetings with key stakeholders, as well as a public submissions process.

95 (iii) – Ongoing stakeholder input is facilitated by provisions of the Australian Capital Territory’s Environmental Flow Guidelines and occurs on other issues on an ad hoc basis (e.g. extensive consultation on the enlarged Cotter Dam project).

96 – The effectiveness of water plan implementation is reported annually in the *ACT Water Report*, which is publicly available online.

See reform action 95 (ii) for more detail.

97 – There are no reported overallocated systems in the Australian Capital Territory and therefore significant adjustment issues have not affected water access entitlement holders.

There are mechanisms available to the Minister to amend water access entitlements through imposing conditions on or amending an existing condition of a water access entitlement.

The Minister is required to provide compensation if an entitlement holder has been adversely affected.

**Knowledge and capacity building**

101 (i) – The Australian Capital Territory advises that its key knowledge and capacity building priorities in recent years have been focussed on addressing water quality issues in the Australian Capital Territory’s streams and lakes.

The current ACTEW Applied Research and Development Program supports decisionmaking processes with regard to water quality and delivery, as well as for generating new business, products, services and interactions for the companies.

ACTEW Water also conducts a range of water and ecological research activities on streams in the Australian Capital Territory region.

Research work has also included:

1. collaboration with the NSW Murrumbidgee Catchment Management Authority and stakeholders to address water management issues
2. a study into the aquatic responses of Australian Capital Territory streams from predicted climate change.

Extensive data collection and ongoing research is undertaken as part of the Environmental Flow Guidelines’ review process.

The Australian Capital Territory Government has been undertaking groundwater assessments and broadening the extent of monitoring since 2002 to respond to a substantial increase in the demand for and use of groundwater.

A risk-based approach to groundwater monitoring has been developed whereby the amount of monitoring in a particular area is proportional to the risk posed to the groundwater through abstraction, contamination or land use change.

The *ACT Water Strategy 2014–44 – Striking the Balance* notes the need for further work to improve knowledge and building research capacity.

101 (ii) – The Australian Capital Territory supports national water knowledge by contributing funds to National Knowledge Platform project.

The ACT has links to eWater and the Institute of Applied Ecology at the University of Canberra to obtain the latest knowledge and access to research on a variety of issues and projects related to water and the environment.

Australian Capital Territory government staff also participate in intergovernmental forums and jurisdictional working groups contributing to their development of skills, knowledge and capacity.

**325 Northern Territory**

**Water access entitlements and planning framework**

26 – At the time of the 1994 COAG Water Reform Framework agreement, no Northern Territory river systems and groundwater resources were identified as overallocated.

As part of its NWI implementation plan, Northern Territory committed to provide an annual public audit of the level of allocation in all river and groundwater systems, commencing in July 2007, to confirm that water resource systems were not overallocated. All water extraction licences are reported in a register on the Department of Land Resource Management’s website, however this information has not been compiled into an annual audit of take from each groundwater or river system.

27 – The *Water Act 1992* (NT), amended 7 November 2011, provides the legislative framework for water planning and entitlements for water resources in Northern Territory.

While the Water Act provides for statutorybased entitlements and the development of water allocation plans (WAPs), it does not address a number of NWI elements.

28–33 – The *Water Act 1992* (NT) provides for the issuing of water licences, which are the statutory instrument for managing access to groundwater and surface water resources.

Licences are not a perpetual share of the consumptive pool.

Northern Territory water licences are issued for the point of extraction (bore or river pump).

They are usually issued for up to 10 years and can be renewed.

WAPs ensure that water is allocated within an estimated sustainable yield and the rules for water trading.

Subject to alternative arrangements which may be specified in WAPs, the Northern Territory has implemented the Water Allocation Planning Framework (WAPF) to define the consumptive pool.

The Northern Territory has advised that preliminary drafting instructions have been prepared to amend the *Water Act 1992* (NT) to include clearer specification of water access entitlements.

34 – Under Section 7 of the *Water Act 1992* (NT), mining and petroleum activities are exempt from water licence and permit provisions.

However, these sectors are subject to an interagency memorandum that allows for consistency with the NWI.

Northern Territory has advised that its review of the *Water Act 1992* (NT) will include a reconsideration of these exemptions.

35 – The Water Act 1992 (NT) specifies that WAPs must include an allocation for the environment within the estimated sustainable yield.

There is no provision for specific licences or allocations for environmental purposes, rather the minimum volume of water to be maintained for environmental purposes is managed through limits and conditions applied to consumptive use through water extraction licensing.

Where WAPs have not been declared, the Northern Territory implements the WAPF when making decisions about whether to issue water extraction licences.

In the Top End (northern third of the Territory), at least 80 per cent of surface water or groundwater recharge is allocated to the environment.

In the arid zone, at least 95 per cent of surface flows are allocated to the environment and groundwater extraction is not to exceed 80 per of the total aquifer storage over 100 years.

This framework has also been implemented in WAPs in the arid zone where there is limited knowledge about environmental water requirements.

In the Northern Territory environmental water provisions are rules based and cannot be traded.

39 – The Northern Territory has implemented NWI-consistent water planning processes.

WAPs have been finalised for four areas and draft plans have been released for public comment in several other areas.

The 2007 Alice Springs Water Resource Strategy has been reviewed and a draft revision released for public comment.

WAPs are under development but not yet completed for areas within the Darwin Rural water control districts where there are high levels of domestic and horticultural use that have resulted in resource stress, as well as for three other groundwater areas.

40 – WAPs must be reviewed at least every five years and expire after 10 years.

In the Northern Territory, monitoring, evaluation and adaptive management arrangements are specified in each water plan.

Two annual reports are publicly available for the Katherine (Tindall Limestone Aquifer) WAP (2009), which include the annual announced allocation and a compilation of monitoring and evaluation actions that have been undertaken within the previous water accounting year.

However, no publicly available evaluation reports are available to assess the progress of WAPs in meeting their objectives.

A review of the 2007 Alice Springs Water Resource Strategy was produced (not publicly available) which reports on whether allocations and flows have been achieved but does not evaluate if these are appropriate.

41 – See NWI paragraph 26 for detail on progress.

43–44 – In its NWI implementation plan, Northern Territory committed to avoiding overallocation in the Katherine/ Daly and Darwin Rural areas.

The Katherine (Tindall Limestone Aquifer) WAP was declared in 2009.

The first five‑year review of the WAP is due in 2014, and Northern Territory advises that changes to be considered are inclusion of surface water extractions in annual announced allocations, revision of restrictive trading rules and the possibility of re‑allocation of water entitlements from licences not being fully utilised.

In 2011 the Northern Territory advised that the Howard East Aquifer in the Darwin Rural area was considered to be potentially overallocated.

The Howard East and Berry Springs WAPs are currently under development.

45 – See actions associated with NWI paragraph 97 for more detail.

46–51 – In the 2011 Biennial Assessment, the Northern Territory advised that drafting instructions had been prepared for incorporation of the risk-assignment framework into the Water Act 1992 (NT), however the current Act does not address risk assignment.

Risk assignment is dealt with at the plan level (in some of the more recent plans).

The Ti Tree Water Resource Plan, Katherine (Tindall Limestone Aquifer) WAP, Western Davenport WAP and Alice Springs Water Resource Strategy all specify that risks to the water resource arising from reductions to the consumptive pool as a result of changes in climate and periodic natural events are borne by water licence holders.

The risk of any reduction or less reliable water allocation under a water licence – arising as a result of bona fide improvements in knowledge of the water system’s capacity to sustain particular extraction levels – are also to be borne by the users for the duration of these plans.

52–54 – Water planning in the Northern Territory includes identifying and maintaining Indigenous cultural water values.

Planning processes have included Indigenous participation, including through membership of planning advisory groups.

The Northern Territory announced in October 2013 that strategic indigenous reserves would no longer be considered for inclusion in WAPs, subject to a consultation and review process to take place over the next two and a half years.

55–57 – The Northern Territory water planning process identifies and estimates water requirements of interception via unlicensed stock and domestic use and farm dams.

There are also arrangements for monitoring growth in stock and domestic rights.

Monitoring of interception issues with potential management implications is based on integrated surface and groundwater models that consider the impact of land use change on catchment yield.

Unlicensed stock and domestic extraction is included in the hydrological modelling in water resource planning.

The Northern Territory has advised that stock and domestic bores, particularly in periurban regions, and related saltwater intrusion into coastal groundwater systems are the priority interception issue in Northern Territory.

WAPs model the take associated with stock and domestic use.

A significance threshold for stock and domestic groundwater take has been established at a level of 20 per cent of the annual recharge.

Stock and domestic bores require construction permits in all Water Control Districts and the Water Act 1992 (NT) allows refusal of a permit if there is insufficient water available (i.e. would result in or aggravate overallocation or overuse).

Dams may require construction permits depending on size.

The Act allows refusal of a permit if there is risk of overallocation associated with the proposed dam.

**Water markets and trading**

59 – The Department of Land Resource Management maintains a groundwater and surface water licence register that is available through its website.

The register provides details pertaining to current groundwater and surface water licences in relation to water trading under WAPs.

Details of groundwater and surface water licences within Northern Territory are available and updated on a monthly basis.

The registers include licensee information, the amounts of each licence issued and whether that licence is permitted to trade water.

60 – Water trading can occur within declared WAP areas according to trading rules set out in the relevant WAP.

The Northern Territory Water Controller is responsible for approving new licences reflecting the trade.

63 – This NWI paragraph does not apply to the Northern Territory.

**Best practice water pricing and institutional arrangements**

65 – Current tariff structures for reticulated water supply adopt two-part tariffs for all customers except portable meter and stand pipe.

This comprises a fixed daily price based on supply pipe diameter and a volumetric usage charge component.

Northern Territory has advised of a 30 per cent price increase for water supply, but it is unclear to what extent it has implemented full cost recovery.

Northern Territory pricing policy is consistent across sectors where entitlements are able to be traded.

66 (i) – There have been several baseline tariff increases in recent years.

The Power and Water Corporation (PWC) is now achieving lower-bound pricing and is moving towards upper-bound pricing.

The service availability charge exists but is not directly linked to total revenue requirement less water usage revenue and developer charges revenue.

This is currently under review.

Water planning and management costs and level of recovery have not been explicitly reported to date.

66 (ii)–(iii) – Since 2008, the following policies have been developed by the PWC and are currently being considered for implementation:

1. recycled water pricing policy
2. water and sewerage capital contributions policy
3. non-potable water pricing policy.

The Northern Territory advised through the Pricing Principles Sub-group of the WTOG that the draft policies have adopted the NWI pricing principles where appropriate, however it is unclear how the policies adopt the pricing principles.

66 (iv) – National Guidelines for Residential Customers Water Accounts were endorsed at the 11th meeting of the Natural Resource Management Ministerial Council (NRMMC) and released on 24 November 2006 by Australian Government, state and territory water ministers.

66 (v) – The Northern Territory subsidises water services in rural and regional areas, including in remote Indigenous communities, through a number of programs which enable the application of uniform pricing across the Northern Territory to non-contract customers. In 2013–14, these programs included grants totalling $158.1 million which included subsidies for electricity, sewerage and water.

67 – There are currently no water use charges applied in the Northern Territory to assist with cost recovery for planning and management.

68 – As part of its NWI implementation plan the Northern Territory committed to provide an annual report that identifies all water planning and management costs, including the costs of underpinning water markets.

No annual reports have been provided to date.

69 – The Northern Territory advised that investment decision-making has been improved by comprehensive and reliable asset condition data. The Darwin Region Water Supply Strategy 2013 and Alice Water Smart Project (since 2011) are based on planning efforts concerned with economic and ecological sustainability.

PWC’s capital works program is approved by the PWC board and NT Treasurer on an annual basis through its Statement of Corporate Intent.

70–72 – Market-based mechanisms are not used for the releases of unallocated water in the Northern Territory.

73 – The Northern Territory advised that water planning and management decisions are required to reflect environmental externalities to the extent that environmental and other public benefit outcomes have been established through planning.

Limits are placed on consumptive pools through water plans to avoid, limit or control environmental externalities.

Despite the consideration of externalities in planning, Northern Territory does not require specific consideration of environmental externalities through the pricing of urban and regional water storage and delivery.

The Northern Territory advised that future demand management programs will include the experiences of other water utilities within Australia.

75 – The PWC has submitted benchmarking information to the National Performance Reports for urban water service providers.

The Northern Territory advised that PWC has a work plan aimed at improving the information collected and performance against benchmarks.

Improved information collection on asset condition as part of the work program has assisted this.

At the time of writing , the future of reporting is uncertain.

76 – PWC’s retail water tariffs do not fully recover its costs of providing current water services.

The costs of operating the performance and benchmarking system are unlikely to be recovered in full by retail water tariff revenue.

77 – Section 60 of the Northern Territory Water Supply and Sewerage Services Act 2009 provides that the Treasurer, as the Minister responsible for the economic regulation of water supply and sewerage services, may issue an order regulating prices for the sale of water supply and sewerage services to a water service provider’s customers.

The Water Supply and Sewerage Services Act 2009 (NT) and its associated regulations require and allow the Utilities Commission to undertake certain regulatory functions in Northern Territory water supply and sewerage services industries for the provision of those services within a sole provider model.

The Commission’s activities in the water and sewerage industries relate mainly to licensing, however the Minister may assign price and service standard monitoring functions to the Commission under his regulation powers.

**Integrated management of environmental water**

79 (i) a) – In the Northern Territory the *Water Act 1992* (amended 2011) and the *Lake Eyre Basin Intergovernmental Agreement Act 2009* provide the statutory frameworks for the management of environmental water.

Under these, all accountabilities for environmental water management, compliance and public reporting of the delivery are with the Minister for Land Resource Management.

A memorandum of understanding between the Department of Land Resource Management and the Department of Mines and Energy provides for conjunctive management of water across different uses.

79 (i) b) – The Northern Territory is a signatory to a number of agreements for shared water resources, including the *Lake Eyre Basin Intergovernmental Agreement 2000* and the *National Partnership Agreement on the Great Artesian Basin Sustainability Initiative (2010)*.

79 (i) c) – Surface and groundwater connectivity is not explicitly recognised in the Act. Some WAP rules specifically address connectivity impacts such as the *Katherine (Tindall Limestone Aquifer) WAP* (2009) and the plans for Alice Springs, Ti Tree and Western Davenport water resource areas limit surface water extractions to protect aquifer recharge.

79 (i) d) – To date, there are no ecological monitoring programs being implemented specifically to assess the effectiveness of environmental water provisions in WAPs.

Targeted ecological monitoring in WAP areas is not yet occurring, however progress has been made in establishing a river health monitoring program for the Katherine River and other systems in the Daly catchment.

If implemented, this program will provide ecological data to inform assessments as to whether environmental flow provisions established under WAPs in the Daly catchment have been effective in achieving the desired ecological outcomes.

While the Northern Territory conducts compliance reporting and reviews on the delivery of environmental water, there is no explicit public reporting on the implementation of environmental water management mechanisms or requirement for independent assessments.

79 (i) e) – Environmental water in the Northern Territory is rules based and cannot be traded.

79 (i) f) – Under the *Water Act 1992* (NT), water control districts can be declared in regions that require enhanced water management arrangements to avoid stressing groundwater reserves, river flows and wetlands.

WAPs may be prepared for water resources within declared water control districts.

79 (ii) No water recovery measures have been deemed necessary in the Northern Territory to date. Licensing processes have been used in some areas to recoup unused portions of entitlements, however the associated volumes of water remain available for consumptive use.

81 – The Northern Territory has participated at a national level in the development of national water accounting standards and reporting frameworks, including the Water Accounting Conceptual Framework, the General Purpose Water Accounting Reports and the Australian Water Accounting Standards (AWAS 1 and AWAS 2).

The Northern Territory uses AWAS 1 and the Water Accounting Conceptual Framework in providing data to the Bureau of Meteorology (BOM) for the general purpose water account.

82 – See actions associated with NWI paragraph 81.

83 – The Northern Territory under its WAP process fully factors in the linkages between surface and groundwater to ensure that allocations within both systems are properly accounted to avoid overallocation.

All allocation decisions where appropriate are based on linked surface and groundwater models due to the linkages between aquifers and river flows.

85 (i) – The Northern Territory does not have general purpose environmental water accounts for environmental water as the Northern Territory’s environmental water is rules based.

In the absence of environmental water entitlements the Northern Territory has not developed an environmental water register.

85 (ii) – Consistent with the *Water Act 1992* (NT), WAPs include measures to ensure compliance with environmental water commitments, but public reporting is limited.

88 – The Northern Territory has agreed to implement the *National Framework for Non-urban Water Metering* (2010), but due to staffing constraints the Northern Territory Metering Implementation Plan has not yet been finalised for implementation.

89 – The Northern Territory is participating in the development of the Environmental Water Accounting Standards through the National Water Accounting Committee.

Also see actions associated with NWI paragraph 81.

**Urban water reform**

91 (i) – The Water Efficiency Labelling and Standards (WELS) scheme is a joint initiative of the Australian Government and the state and territory governments.

The *Commonwealth Water Efficiency Labelling and Standards Act 2005* provides the legal framework for the scheme.

The *Water Efficiency Labelling and Standards (National Uniform Legislation) Act 2014* (NT) came into effect on 2 June 2014.

91 (ii) – The Smart Approved WaterMark is a not-for-profit organisation established by four associations: the Australian Water Association, Irrigation Australia, the Nursery and Garden Industry, Australia and the Water Services Association of Australia.

It is overseen by a steering committee with representation from the Australian and state and territory governments, water utilities, the four governing associations, and the chair of the Technical Expert Panel (an independent panel which assesses applications to the scheme).

Project establishment was finalised in 2011 and a report on the delivery of the Smart Approved WaterMark was provided to the Department of the Environment.

The program continues to provide product efficiency ratings to consumers.

91 (iii) – Northern Territory participated in the production of the Commission’s national review of water restrictions.

There are currently no water restrictions in place in the Northern Territory and it has some of the highest rates of per household water use in Australia.

The Northern Territory has programs in place to reduce water consumption rates in Darwin and Alice Springs.

The Northern Territory Government, through the PWC, has recently launched Living Water Smart in the Darwin region.

This is a major five-year water conservation initiative, targeted at residential, business and government customers, with the objective of reducing Darwin’s water use by 25 per cent.

Alice Water Smart is a collaborative project, comprising several programs to support water conservation measures within Alice Springs and aiming to save 1.6 GL of water over two years.

91 (iv) – Living Water Smart (Darwin) will focus on the following areas of PWC’s water supply network:

1. develop and implement leak detection program for Darwin water supply network
2. develop and implement pressure management plan for Darwin water supply network
3. install monitoring and controlling equipment for permanent leak and pressure management.

Living Water Smart will also provide industry training for leak detection in properties. Alice Water Smart includes a focus on pressure management and leak reduction in the reticulation system.

92 – Water sensitive urban design has been incorporated in the new sub-divisions of Muirhead, Bellamack, Johnston and Zuccoli in Darwin and Palmerston.

In Darwin, the Living Water Smart program is intended to introduce rebates for homes, businesses, accommodation, hospitals and schools and the NT is developing a stormwater strategy for the Darwin Harbour region.

In Alice Springs, the Alice Water Smart program is partnering with the Department of Land Resource Management to temporarily enhance the Central Australia Waterwise Rebate Scheme.

**Community partnerships and adjustment**

95 – Section 23 of the *Water Act 1992* (NT) provides for, but does not require the establishment of water advisory committees to give advice on WAPs.

Community advisory committees have been involved in the development of WAPs in the Territory to date, with members representing economic, cultural and environmental interests.

The Northern Territory Government recommitted to utilising community advisory committees to support preparation of future WAPs in October 2013.

96 – The Water Act 1992 (NT) requires the Minister to specify the period (no longer than 10 years) that a WAP is to remain in force.

The Minister must ensure a review of a WAP is conducted at intervals no longer than five years.

All WAPs set out monitoring and reporting requirements however no reports have been publicly released and many objectives require monitoring only at the review stage of the WAP.

Annual announced allocation reports provide some information on monitoring and current conditions.

The Ti Tree WAP and Alice Springs Water Resource Strategy have been reviewed to date with the reviewed Alice Springs Strategy currently in draft form.

97 – As noted for NWI paragraph 79 (ii), no water recovery measures have been deemed necessary in the Northern Territory to date.

**Knowledge and capacity building**

101 – The implementation sections of draft and reviewed WAPs identify key priorities and knowledge gaps including identification of minimum streamflows and dry season environmental water requirements, and the establishment of resource condition indicators for various resources.

Key science priorities include:

1. assessment of the impact of anthropogenically reduced dry season flows on the ecology of the Daly and Roper rivers (this is also a key knowledge gap, compounded by the lack of knowledge of the significance of dry season ecology in the wet/dry tropics)
2. understanding the (minimum) environmental water requirements of wetlands, springfed monsoon vine forests and the estuarine areas of the Daly, Roper etc.
3. quantification of groundwater recharge, particularly in the arid zone.

The Northern Territory Government advised that it will assess the ecological significance of Roper River hydraulic environments most vulnerable to reduced flow, both natural and anthropogenically induced, in 2014.

The Northern Territory also intends to commence a partnership with Charles Darwin University to assess the use by fish of riffle habitats (which are most vulnerable to reduced flow) in the Katherine River.