

The National Water Commission is an independent statutory body in the Prime Minister's portfolio. Its role is to drive the national water reform agenda.

© Commonwealth of Australia 2006

This work is copyright. Apart from any use as permitted under the *Copyright Act 1968*, no part may be reproduced by any process without prior written permission from the Commonwealth. Requests and inquiries concerning reproduction and rights should be addressed to the Commonwealth Copyright Administration, Attorney General's Department, Robert Garran Offices, National Circuit,

Barton ACT 2600 or posted at <http://www.ag.gov.au/cca>.

ISBN:1-921107-13-8

Published by the National Water Commission

95 Northbourne Avenue

Canberra ACT 2600

Tel: 02 6102 6088

Email: [enquiries@nwc.gov.au](mailto:enquiries@nwc.gov.au)

Date of publication: April 2006

Design and layout by: Studio 218



## FOREWORD

This is the sixth National Competition Policy assessment of governments' progress with implementation of water-related reforms. It is the first such assessment by the National Water Commission, with previous assessments having been carried out by the National Competition Council.

The 2005 National Competition Policy assessment has been a major undertaking for the National Water Commission so early in the Commission's life, noting that Commissioners were appointed on 10 March 2005. The Commission would like to express its thanks to state and territory officials for their cooperation in providing a significant amount of information to the Commission for this assessment.

Overall, the Commission found that state and territory governments are making considerable effort and progress in improving the management of Australia's water resources. This is encouraging, and bodes well for the tangible improvements in water systems and water use which should flow as a result of this effort over the coming years.

At the same time, the assessment confirms that the need to maintain the pace and direction of water reform – especially as agreed by governments in the National Water Initiative – remains a national priority.

This is underscored by the areas where the Commission found COAG water reform commitments had not been met, or where more progress needs to be made.

In particular, the Commission found that more needs to be done to establish and promote effective water trading. In our view, water trading of all kinds - interstate and intrastate trade, and trade in permanent, temporary and other derived water products - is a fundamental building block of water reform, and critical to achieving many of the other reform gains sought by COAG.

The Commission also found that further improvements in water planning needs to be made to underpin present and future water use. This is essential to sustainably secure the water used by agriculture and industry, the water consumed and enjoyed in our cities and towns, and the water on which Australia's ecosystems depend for their health and survival.

The National Water Commission will assess governments' water reform performance in future years through the biennial assessments of progress in implementing the National Water Initiative. The first biennial assessment is scheduled for 2006-07. In this context, the Commission will return to many of the unresolved issues which have been identified in this 2005 National Competition Policy assessment.

In its wider role of helping governments to implement the National Water Initiative, the Commission will also be working with jurisdictions to deliver on the actions laid out in the National Water Initiative in order to meet the outcomes and objectives of that agreement.

There is no doubt that this will require continued and concerted national effort – greater cooperation between governments than has been seen to date, and greater collaboration with major water users and other stakeholders to ensure the reforms are effective and sustained on the ground.

Ken Matthews  
Chairman  
National Water Commission

---



# TABLE OF CONTENTS

## FOREWORD

<b>FINDINGS AND RECOMMENDATIONS</b>	<b>xiv</b>
New South Wales	xvi
Victoria	xxv
Queensland	xxx
Western Australia	xxxvii
South Australia	
Tasmania	
Australian Capital Territory	
Northern Territory	
Murray-Darling Basin Commission	
<b>1 SCOPE OF THE 2005 NATIONAL COMPETITION POLICY ASSESSMENT</b>	<b>1.1</b>
1.1 Summary of National Competition Policy Water Reform Obligations	1.2
1.2 Approach to the 2005 Assessment	1.5
1.3 The 2005 Assessment Process	1.7
<b>2 NEW SOUTH WALES</b>	<b>2.1</b>
2.1 Implementation	2.1
2.2 Water Access Entitlements and Planning Framework	2.4
<b>2.2.1 Water Access Entitlements</b>	<b>2.4</b>
<b>2.2.2 Environmental and Other Public Benefit Outcomes</b>	<b>2.12</b>
<b>2.2.3 Water Planning and Addressing Currently Overallocated and/or Overused Systems</b>	<b>2.15</b>
<b>2.2.4 Assigning Risks for Changes in Allocation</b>	<b>2.44</b>
<b>2.2.5 Indigenous Access</b>	<b>2.46</b>
<b>2.2.6 Interception</b>	<b>2.48</b>
2.3 Water Markets and Trading	2.50
2.4 Best Practice Water Pricing and Institutional Arrangement	2.60
<b>2.4.1 Water Storage and Delivery Pricing</b>	<b>2.60</b>
<b>2.4.2 Cost Recovery for Planning and Management</b>	<b>2.73</b>
<b>2.4.3 Investment in New or Refurbished Infrastructure</b>	<b>2.79</b>
<b>2.4.4 Release of Unallocated Water</b>	<b>2.83</b>
<b>2.4.5 Environmental Externalities</b>	<b>2.86</b>
<b>2.4.6 Institutional Reform</b>	<b>2.90</b>
2.5 Integrating Water Management for Environmental and Other Public Benefit Outcomes	2.95



<b>2.5.1</b>	<b>Institutional Arrangements</b>	<b>2.95</b>
<b>2.5.1</b>	<b>Water Recovery for Environmental Outcomes</b>	<b>2.101</b>
2.6	Water Resource Accounting	2.105
<b>2.6.1</b>	<b>Benchmarking of Accounting Systems</b>	<b>2.105</b>
<b>2.6.2</b>	<b>Consolidated water accounts</b>	<b>2.105</b>
<b>2.6.3</b>	<b>Environmental Water Accounting</b>	<b>2.106</b>
<b>2.6.4</b>	<b>Reporting</b>	<b>2.107</b>
2.7	Urban Water	2.108
<b>2.7.1</b>	<b>Demand Management</b>	<b>2.108</b>
<b>2.7.2</b>	<b>Innovation and Capacity Building to Create Water Sensitive Australian Cities</b>	<b>2.109</b>
2.8	Community Partnership and Adjustment	2.111
2.9	National Water Quality Management Strategy	2.114
<b>3</b>	<b>vICTORIA</b>	<b>3.1</b>
3.1	Implementation	3.1
3.2	Water Access Entitlements and Planning Framework	3.3
<b>3.2.1</b>	<b>Water Access Entitlements</b>	<b>3.3</b>
<b>3.2.2</b>	<b>Environmental and Other Public Benefit Outcomes</b>	<b>3.9</b>
<b>3.2.3</b>	<b>Water Planning and Addressing Currently Overallocated and/or Overused Systems</b>	<b>3.12</b>
<b>3.2.4</b>	<b>Assigning Risks for Changes in Allocation</b>	<b>3.34</b>
<b>3.2.5</b>	<b>Indigenous Access</b>	<b>3.36</b>
<b>3.2.6</b>	<b>Interception</b>	<b>3.37</b>
3.3	Water Markets and Trading	3.40
3.4	Best Practice Water Pricing and Institutional Arrangement	3.51
<b>3.4.1</b>	<b>Water Storage and Delivery Pricing</b>	<b>3.51</b>
<b>3.4.2</b>	<b>Cost Recovery for Planning and Management</b>	<b>3.60</b>
<b>3.4.3</b>	<b>Investment in New or Refurbished Infrastructure</b>	<b>3.62</b>
<b>3.4.4</b>	<b>Release of Unallocated Water</b>	<b>3.63</b>
<b>3.4.5</b>	<b>Environmental Externalities</b>	<b>3.65</b>
<b>3.4.6</b>	<b>Institutional Reform</b>	<b>3.68</b>
3.5	Integrating Water Management for Environmental and Other Public Benefit Outcomes	3.71
<b>3.5.1</b>	<b>Institutional Arrangements</b>	<b>3.71</b>
<b>3.5.1</b>	<b>Water Recovery for Environmental Outcomes</b>	<b>3.76</b>
3.6	Water Resource Accounting	3.79
<b>3.6.1</b>	<b>Benchmarking of Accounting Systems</b>	<b>3.79</b>



3.6.2	<b>Consolidated water accounts</b>	3.79
3.6.3	<b>Environmental Water Accounting</b>	3.80
3.6.4	<b>Reporting</b>	3.81
3.7	Urban Water	3.82
3.7.1	<b>Demand Management</b>	3.82
3.7.2	<b>Innovation and Capacity Building to Create Water Sensitive Australian Cities</b>	3.82
3.8	Community Partnership and Adjustment	3.85
3.9	National Water Quality Management Strategy	3.87
4	<b>QUEENSLAND</b>	4.1
4.1	Implementation	4.1
4.2	Water Access Entitlements and Planning Framework	4.3
4.2.1	<b>Water Access Entitlements</b>	4.3
4.2.2	<b>Environmental and Other Public Benefit Outcomes</b>	4.9
4.2.3	<b>Water Planning and Addressing Currently Overallocated and/or Overused Systems</b>	4.11
4.2.4	<b>Assigning Risks for Changes in Allocation</b>	4.37
4.2.5	<b>Indigenous Access</b>	4.38
4.2.6	<b>Interception</b>	4.39
4.3	Water Markets and Trading	4.42
4.4	Best Practice Water Pricing and Institutional Arrangement	4.49
4.4.1	<b>Water Storage and Delivery Pricing</b>	4.49
4.4.2	<b>Cost Recovery for Planning and Management</b>	4.56
4.4.3	<b>Investment in New or Refurbished Infrastructure</b>	4.61
4.4.4	<b>Release of Unallocated Water</b>	4.62
4.4.5	<b>Environmental Externalities</b>	4.64
4.4.6	<b>Institutional Reform</b>	4.67
4.5	Integrating Water Management for Environmental and Other Public Benefit Outcomes	4.71
4.5.1	<b>Institutional Arrangements</b>	4.71
4.6	Water Resource Accounting	4.76
4.6.1	<b>Benchmarking of Accounting Systems</b>	4.76
4.6.2	<b>Consolidated water accounts</b>	4.76
4.6.3	<b>Environmental Water Accounting</b>	4.77
4.6.4	<b>Reporting</b>	4.78
4.7	Urban Water	4.79
4.7.1	<b>Demand Management</b>	4.79



4.7.2	<b>Innovation and Capacity Building to Create Water Sensitive Australian Cities</b>	<b>4.80</b>
4.8	Community Partnership and Adjustment	4.83
4.9	National Water Quality Management Strategy	4.85
<b>5</b>	<b>WESTERN AUSTRALIA</b>	<b>5.1</b>
5.1	Water Access Entitlements and Planning Framework	5.1
5.1.1	<b>Water Access Entitlements</b>	<b>5.1</b>
5.1.2	<b>Water Planning and Addressing Currently Overallocated and/or Overused Systems</b>	<b>5.6</b>
5.2	Water Markets and Trading	5.23
5.3	Water Storage and Delivery Pricing	5.27
5.3b	Rural and Regional	5.29
5.3.1	<b>Cost Recovery for Planning and Management</b>	<b>5.48</b>
5.3.2	<b>Investment in New or Refurbished Infrastructure</b>	<b>5.34</b>
5.3.3	<b>Release of Unallocated Water</b>	<b>5.36</b>
5.3.4	<b>Environmental Externalities</b>	<b>5.56</b>
5.3.5	<b>Institutional Reform</b>	<b>5.58</b>
5.4	Community Partnership and Adjustment	5.63
5.5	<b>National Water Quality Management Strategy</b>	<b>5.65</b>
<b>6</b>	<b>SOUTH AUSTRALIA</b>	<b>6.1</b>
6.1	Implementation	6.1
6.2	Water Access Entitlements and Planning Framework	6.3
6.2.1	<b>Water Access Entitlements</b>	<b>6.3</b>
6.2.2	<b>Environmental and Other Public Benefit Outcomes</b>	<b>6.8</b>
6.2.3	<b>Water Planning and Addressing Currently Overallocated and/or Overused Systems</b>	<b>6.10</b>
6.2.4	<b>Assigning Risks for Changes in Allocation</b>	<b>6.25</b>
6.2.5	<b>Indigenous Access</b>	<b>6.27</b>
6.2.6	<b>Interception</b>	<b>6.28</b>
6.3	Water Markets and Trading	6.30
6.4	Best Practice Water Pricing and Institutional Arrangement	6.38
6.4.1	<b>Water Storage and Delivery Pricing</b>	<b>6.38</b>
6.4.2	<b>Cost Recovery for Planning and Management</b>	<b>6.52</b>
6.4.3	<b>Investment in New or Refurbished Infrastructure</b>	<b>6.57</b>
6.4.4	<b>Release of Unallocated Water</b>	<b>6.62</b>
6.4.5	<b>Environmental Externalities</b>	<b>6.63</b>



<b>6.4.6</b>	<b>Institutional Reform</b>	<b>6.67</b>
6.5	Integrating Water Management for Environmental and Other Public Benefit Outcomes	6.73
<b>6.5.1</b>	<b>Institutional Arrangements</b>	<b>6.73</b>
<b>6.5.2</b>	<b>Water Recovery for Environmental Outcomes</b>	<b>6.78</b>
6.6	Water Resource Accounting	6.81
<b>6.6.1</b>	<b>Benchmarking of Accounting Systems</b>	<b>6.81</b>
<b>6.6.2</b>	<b>Consolidated water accounts</b>	<b>6.81</b>
<b>6.6.3</b>	<b>Environmental Water Accounting</b>	<b>6.82</b>
<b>6.6.4</b>	<b>Reporting</b>	<b>6.82</b>
6.7	Urban Water	6.84
<b>6.7.1</b>	<b>Demand Management</b>	<b>6.84</b>
<b>6.7.2</b>	<b>Innovation and Capacity Building to Create Water Sensitive Australian Cities</b>	<b>6.85</b>
6.8	Community Partnership and Adjustment	6.87
6.9	National Water Quality Management Strategy	6.89
<b>7</b>	<b>TASMANIA</b>	<b>7.1</b>
7.1	Implementation	7.1
7.2	Water Access Entitlements and Planning Framework	7.2
<b>7.2.1</b>	<b>Water Access Entitlements</b>	<b>7.2</b>
<b>7.2.2</b>	<b>Environmental and Other Public Benefit Outcomes</b>	<b>7.8</b>
<b>7.2.3</b>	<b>Water Planning and Addressing Currently Overallocated and/or Overused Systems</b>	<b>7.10</b>
<b>7.2.4</b>	<b>Assigning Risks for Changes in Allocation</b>	<b>7.29</b>
<b>7.2.5</b>	<b>Indigenous Access</b>	<b>7.30</b>
<b>7.2.6</b>	<b>Interception</b>	<b>7.31</b>
7.3	Water Markets and Trading	7.33
7.4	Best Practice Water Pricing and Institutional Arrangement	7.36
<b>7.4.1</b>	<b>Water Storage and Delivery Pricing</b>	<b>7.36</b>
<b>7.4.2</b>	<b>Cost Recovery for Planning and Management</b>	<b>7.53</b>
<b>7.4.3</b>	<b>Investment in New or Refurbished Infrastructure</b>	<b>7.56</b>
<b>7.4.4</b>	<b>Release of Unallocated Water</b>	<b>7.61</b>
<b>7.4.5</b>	<b>Environmental Externalities</b>	<b>7.64</b>
<b>7.4.6</b>	<b>Institutional Reform</b>	<b>7.65</b>
7.5	Integrating Water Management for Environmental and Other Public Benefit Outcomes	7.71
<b>7.5.1</b>	<b>Institutional Arrangements</b>	<b>7.71</b>
7.6	Water Resource Accounting	7.76



<b>7.6.1</b>	<b>Benchmarking of Accounting Systems</b>	<b>7.76</b>
<b>7.6.2</b>	<b>Consolidated Water Accounts</b>	<b>7.76</b>
<b>7.6.3</b>	<b>Environmental Water Accounting</b>	<b>7.77</b>
<b>7.6.4</b>	<b>Reporting</b>	<b>7.77</b>
7.7	Urban Water	7.79
<b>7.7.1</b>	<b>Demand Management</b>	<b>7.79</b>
<b>7.7.2</b>	<b>Innovation and Capacity Building to Create Water Sensitive Australian Cities</b>	<b>7.79</b>
7.8	Community Partnership and Adjustment	7.81
7.9	National Water Quality Management Strategy	7.83
<b>8</b>	<b>AUSTRALIAN CAPITAL TERRITORY</b>	<b>8.1</b>
8.1	Implementation	8.1
8.2	Water Access Entitlements and Planning Framework	8.4
<b>8.2.1</b>	<b>Water Access Entitlements</b>	<b>8.4</b>
<b>8.2.2</b>	<b>Environmental and Other Public Benefit Outcomes</b>	<b>8.8</b>
<b>8.2.3</b>	<b>Water Planning and Addressing Currently Overallocated and/or Overused Systems</b>	<b>8.9</b>
<b>8.2.4</b>	<b>Assigning Risks for Changes in Allocation</b>	<b>8.15</b>
<b>8.2.5</b>	<b>Indigenous Access</b>	<b>8.17</b>
<b>8.2.6</b>	<b>Interception</b>	<b>8.18</b>
8.3	Water Markets and Trading	8.20
8.4	Best Practice Water Pricing and Institutional Arrangement	8.23
<b>8.4.1</b>	<b>Water Storage and Delivery Pricing</b>	<b>8.23</b>
<b>8.4.2</b>	<b>Cost Recovery for Planning and Management</b>	<b>8.26</b>
<b>8.4.3</b>	<b>Investment in New or Refurbished Infrastructure</b>	<b>8.29</b>
<b>8.4.4</b>	<b>Release of Unallocated Water</b>	<b>8.31</b>
<b>8.4.5</b>	<b>Environmental Externalities</b>	<b>8.32</b>
<b>8.4.6</b>	<b>Institutional Reform</b>	<b>8.33</b>
8.5	Integrating Water Management for Environmental and Other Public Benefit Outcomes	8.36
<b>8.5.1</b>	<b>Institutional Arrangements</b>	<b>8.36</b>
8.6	Water Resource Accounting	8.40
<b>8.6.1</b>	<b>Benchmarking of Accounting Systems</b>	<b>8.40</b>
<b>8.6.2</b>	<b>Consolidated Water Accounts</b>	<b>8.40</b>
<b>8.6.3</b>	<b>Environmental Water Accounting</b>	<b>8.41</b>
<b>8.6.4</b>	<b>Reporting</b>	<b>8.42</b>





8.7	Urban Water	8.43
<b>8.7.1</b>	<b>Demand Management</b>	<b>8.43</b>
<b>8.7.2</b>	<b>Innovation and Capacity Building to Create Water Sensitive Australian Cities</b>	<b>8.44</b>
8.8	Community Partnership and Adjustment	8.45
8.9	National Water Quality Management Strategy	8.47
<b>9</b>	<b>NORTHERN TERRITORY</b>	<b>9.1</b>
9.1	Implementation	9.1
9.2	Water Access Entitlements and Planning Framework	9.3
<b>9.2.1</b>	<b>Water Access Entitlements</b>	<b>9.3</b>
<b>9.2.2</b>	<b>Environmental and Other Public Benefit Outcomes</b>	<b>9.7</b>
<b>9.2.3</b>	<b>Water Planning and Addressing Currently Overallocated and/or Overused Systems</b>	<b>9.10</b>
<b>9.2.4</b>	<b>Assigning Risks for Changes in Allocation</b>	<b>9.20</b>
<b>9.2.5</b>	<b>Indigenous Access</b>	<b>9.21</b>
<b>9.2.6</b>	<b>Interception</b>	<b>9.22</b>
9.3	Water Markets and Trading	9.24
9.4	Best Practice Water Pricing and Institutional Arrangement	9.27
<b>9.4.1</b>	<b>Water Storage and Delivery Pricing</b>	<b>9.27</b>
<b>9.4.2</b>	<b>Cost Recovery for Planning and Management</b>	<b>9.31</b>
<b>9.4.3</b>	<b>Investment in New or Refurbished Infrastructure</b>	<b>9.33</b>
<b>9.4.4</b>	<b>Release of Unallocated Water</b>	<b>9.34</b>
<b>9.4.5</b>	<b>Environmental Externalities</b>	<b>9.35</b>
<b>9.4.6</b>	<b>Institutional Reform</b>	<b>9.36</b>
9.5	Integrating Water Management for Environmental and Other Public Benefit Outcomes	9.40
<b>9.5.1</b>	<b>Institutional Arrangements</b>	<b>9.40</b>
9.6	Water Resource Accounting	9.46
<b>9.6.1</b>	<b>Benchmarking of Accounting Systems</b>	<b>9.46</b>
<b>9.6.2</b>	<b>Consolidated water accounts</b>	<b>9.46</b>
<b>9.6.3</b>	<b>Environmental Water Accounting</b>	<b>9.47</b>
<b>9.6.4</b>	<b>Reporting</b>	<b>9.48</b>
9.7	Urban Water	9.49
<b>9.7.1</b>	<b>Demand Management</b>	<b>9.49</b>
<b>9.7.2</b>	<b>Innovation and Capacity Building to Create Water Sensitive Australian Cities</b>	<b>9.50</b>
9.8	Community Partnership and Adjustment	9.52
9.9	National Water Quality Management Strategy	9.54



10	<b>MURRAY-DARLING BASIN COMMISSION</b>	<b>10.1</b>
10.1	Water Planning and Addressing Currently Overallocated and/or Overused Systems	10.1
10.2	Water Markets and Trading	10.11
10.3	Water Recovery for Environmental Outcomes	10.16

## Appendix

Submissions to the 2005 National Competition Policy assessment of governments progress in implementing water reforms	A.1
--	-----

References	R.1
------------	-----

## Boxes

1	Southern Murray-Darling Water Trading Progress	xx
---	--	----

## Tables

1.1	Water sharing plans gazetted by February 2003 and implemented in July 2004	2.21
2.2	Groundwater management areas where a water sharing plan has been gazetted, but implementation deferred until July 2006	2.23
2.3	Surface water systems to be addressed through the 'macro' planning process	2.25
2.4	Groundwater systems to be addressed through the 'macro' planning process	2.26
2.5	Systems to be addressed through individual water sharing plans	2.27
6.1	Schedule for additional 1999 implementation programme priority Water Allocation Plan adoption and review	6.20
6.2	Regional and catchment water monitoring reviews	6.91







# FINDINGS AND RECOMMENDATIONS

The Council of Australian Governments (COAG) agreed in 1994 on a strategic framework for water resource policy and reform (the 1994 COAG Water Reform Framework) to improve the efficiency and effectiveness of Australia's water supply and wastewater industries<sup>1</sup>. Governments agreed to implement sustainable water management arrangements that account for all uses of water (agriculture, industry, household and the environment).

Recognising the continuing national imperative to increase the productivity and efficiency of Australia's water use, the need to service rural and urban communities, and to ensure the health of river and groundwater systems, COAG agreed in 2003 to refresh its 1994 water reform agenda by developing a new National Water Initiative to provide greater certainty for investors in the water industry and for the environment.

The National Water Initiative was signed at the June 2004 COAG meeting by the Australian Government and all state and territory governments, with the exception of Western Australia and Tasmania. The Tasmanian Government subsequently signed the National Water Initiative on 2 June 2005. At time of writing, Western Australia is yet to sign, although the Western Australian Premier has recently indicated his intention to do so.

This is the sixth National Competition Policy assessment of governments' progress with implementation of water-related reforms, following assessments in 1999, 2001, 2002, 2003, and 2004. The 2001 assessment considered governments' implementation of all aspects of the 1994 COAG Water Reform Framework. The 2002, 2003 and 2004 National Competition Policy assessments considered governments' implementation of specific reforms according to the assessment schedule agreed to by COAG senior officials for those years.

<sup>1</sup> The Water Reform Framework was incorporated into the agreement to implement National Competition Policy and related reforms, and has been amended from time to time, including by the 1996 revisions to include groundwater and stormwater, and by the Tripartite agreement of January 1999.

<sup>2</sup> This agreement is provided in the National Water Initiative, and for Western Australia (which is not a signatory to the National Water Initiative) through correspondence between the Prime Minister and the Premier of Western Australia.

In accordance with this schedule, and recognising the new COAG commitment to water reform under the National Water Initiative, the 2005 National Competition Policy assessment considered states and territories' (and, where relevant, the Murray-Darling Basin Commission's) progress with implementation of the entire COAG water reform agenda. This includes progress with implementing the 1994 COAG Water Reform Framework commitments, as modified and updated by the National Water Initiative, and new commitments under the National Water Initiative that were due for completion in 2004 and 2005.

The National Competition Council undertook all previous National Competition Policy assessments of progress on water reform. The Australian Government and all state and territory governments agreed that the National Water Commission undertake the 2005 National Competition Policy assessment<sup>2</sup>.

In August 2005, the Commission released the Water Reform Assessment Framework 2005 ([www.nwc.gov.au](http://www.nwc.gov.au)). Western Australia was not a signatory to the National Water Initiative at the time of the assessment. As a result, the Water Reform Assessment Framework 2005 – Western Australia was subsequently prepared and is used in this assessment ([www.nwc.gov.au](http://www.nwc.gov.au)).

While the assessment considers jurisdictions' progress across all COAG water reform elements, the Commission particularly focused on jurisdictions' progress in those areas of water reform that are critical to realising the gains sought by COAG. Therefore, the Commission's priorities for the 2005 National Competition Policy assessment were to assess progress on:

- water access entitlements
- water planning for secure ecological and resource outcomes
- addressing overallocation and overuse of water systems
- water trading, and
- water pricing.

The assessment and this summary considers the progress of each jurisdiction on its merits and does not compare jurisdictions with each other. Nevertheless, there are COAG

commitments that can be met only if there is collaborative action by jurisdictions. Therefore, performance is considered in that broader context, where applicable. Because responsibility for water rests with the states and territories, the water reform performance of the Australian Government is not (and has not previously been) assessed under National Competition Policy.

It is important to note that any finding made in this assessment (for example, that a COAG commitment has been met or that satisfactory progress is being made) is for the purposes of the 2005 National Competition Policy assessment only. Water reform is an ongoing endeavour and progress will continue to be assessed by the National Water Commission as agreed in the National Water Initiative.

The following summary of findings and recommendations is based on the highlights of findings in the detailed assessment of each state and territory. The points highlighted are those of particular interest or concern, and may, therefore, appear to identify more shortcomings in progress than does the full assessment.

Overall, the Commission notes that state and territory governments are making considerable effort and progress in improving the management of their water resources.

The Commission found a number of areas where COAG commitments were not met or where little progress had been made by states and territories and these are identified in the summary below and in the detailed assessment.

The Commission found three areas where COAG commitments were not met and where it recommends that penalties be applied. Penalties are recommended in these areas because of the significance of these issues to water reform progress within the relevant state or across states. Penalties are recommended in relation to:

- the failure to meet specific COAG commitments to open up interstate trade in permanent water entitlements in the southern Murray-Darling Basin, where penalties are recommended for New South Wales, Victoria and South Australia, and
- New South Wales' compliance with its COAG commitments in relation to water planning and addressing overallocated and/or overused systems, where the Commission is recommending retaining half of

the suspended competition payment amount which was recommended in the 2004 National Competition Policy assessment, and

- Western Australia's compliance with its COAG commitments in relation to water planning and addressing overallocated and/or overused systems, where a penalty is recommended.

## NEW SOUTH WALES

### Implementation

New South Wales has made satisfactory progress in meeting its COAG commitments under this assessment item. New South Wales has submitted a final implementation plan for accreditation by the Commission. Considerable time is being taken to finalise the new Border Rivers Intergovernmental Agreement with Queensland. The Commission urges both governments to conclude effective arrangements for the Border Rivers as soon as possible. None of the Murray-Darling Basin jurisdictions, including New South Wales, has given any indication when the 1992 Murray-Darling Basin Agreement will be reviewed.

### Water Access Entitlements and Planning Framework

#### *Water Access Entitlement*

Overall, New South Wales has made satisfactory progress towards its COAG commitments in this area. New South Wales has incorporated the National Water Initiative access entitlement framework into its legislative regime but has yet to complete licence conversion across the state. Good progress is being made towards full development of a compatible, publicly accessible register for all water access entitlements and trades. Consultation has been significant in areas where licence conversion has already occurred, but it appears less satisfactory in areas where licences are yet to be converted.

#### *Environmental and Other Public Benefit Outcomes*

Overall, New South Wales has met its COAG commitments in this area. The National Water Initiative architecture for the provision of water for environmental and other public benefit outcomes has been incorporated into the New South Wales' water entitlement, planning and management regimes. This water is provided through planned (rules-based) or adaptive

(held under a water access entitlement) environmental water. The Commission continues to have concerns about the planning processes used to determine the amount of water allocated for the environment.

*Water Planning and Addressing Currently Overallocated and/or Overused Systems*

For the 2005 National Competition Policy assessment, the Commission has assessed New South Wales with regard to the 2004–05 suspended payments (based on the evidence it has provided to meet the requirements for recouping these payments) and also New South Wales' ongoing water planning activity and consistency with COAG commitments as set out in the 2005 National Competition Policy Assessment Framework.

New South Wales has comprehensive water management arrangements that have legislative backing. New South Wales has made substantial progress towards finalising water planning arrangements for all systems identified in its 1999 implementation programme.

The Commission considers that New South Wales has made a considerable effort to provide information on its water planning processes for the purpose of this 2005 National Competition Policy assessment, in particular in response to suspended payments from the 2004 National Competition Policy assessment.

The information provided by New South Wales gave the Commission greater confidence (compared with previous National Competition Policy assessments) that it did draw on best available science in some systems, relied heavily on hydrologic modelling using good quality models, and undertook certain new studies to inform planning decisions.

Therefore, the Commission recommends returning \$13 million of the \$26 million 2004–05 suspended competition payment, on the basis of the further evidence provided in response to the 2005 National Competition Policy assessment.

Nevertheless, the information provided by New South Wales and the Commission's review of planning processes has reinforced concerns that:

- the ecological science that was used was inadequate to inform decision-making in some water systems for which plans were being prepared

- allied with the point above, New South Wales did not appear to have a consistent and coherent methodology for assessing environmental water needs and developing environmental water allocations (rather, existing environmental flow objectives from 1998 were modified in response to expert opinion and verbal presentations), and
- planning has lacked transparency in terms of the amount and type of publicly available information, the reasonable documentation of planning considerations, and the way in which trade-offs were reached between consumptive and environmental water in plans.

Therefore, the Commission considers that the information provided does not comprehensively:

- support New South Wales' current environmental allocation arrangements for all systems within the state, nor
- demonstrate that New South Wales' environmental allocations are within a range of outcomes that could reasonably be reached on consideration of the best available science and robust evidence.

With regard to the New South Wales' water reform progress in 2005, the Commission also has some concerns that New South Wales will continue to use planning processes that lack transparency in the science being used and the trade-offs to be made. Such concerns about the 'macro' planning process have also been expressed in submissions from major stakeholders to the 2005 National Competition Policy assessment.

On the basis of the Commission's conclusion that New South Wales has not fully addressed the suspended payment matter, and that there remain concerns about New South Wales' ongoing water planning activities, the Commission recommends a continuing suspension of \$13 million of New South Wales' 2004–05 competition payments.

The Commission further recommends that this suspended penalty be able to be recouped by New South Wales if it can demonstrate, to the Commission's satisfaction, that it:

- has improved the ecological science used in developing water sharing plans for all remaining systems through both the 'macro' and individual planning processes



- has improved the transparency of the ecological science and the water planning processes for 'macro' water sharing plans and remaining individual water sharing plans, for example through peer review of the science used, through more effective engagement with stakeholders, and through greater transparency around the trade-offs made between consumptive and environmental water allocations in water planning, and
- is monitoring outcomes of water sharing rules and environmental allocations in water systems where water sharing plans already exist.

#### *Assigning Risks for Changes in Allocation*

New South Wales has made significant progress towards its COAG commitments in this area. New South Wales has a timetable in place to integrate the National Water Initiative risk assignment framework into its legislative and administrative water entitlement and planning regimes. Successful implementation will rely on all water sharing plans being in place and dealing with known overallocation and overuse.

#### *Indigenous Access*

New South Wales has met its COAG commitments in this area. Administrative arrangements for the incorporation of Indigenous water issues into water planning processes are in place, and additional programmes to further this process are to be introduced. State legislation includes recognition of the possible existence of native title rights to water.

#### *Interception*

New South Wales has met its COAG commitments in this area. Steps to implement water interception measures as detailed in the National Water Initiative are being taken. There is still some concern about the lack of a policy framework to address interception by different uses and adequacy of consultation surrounding policy development for water interception.

#### *Water Markets and Trading*

New South Wales has taken steps to build an effective legislative and administrative framework to enable water trading. Nevertheless, constraints on trade remain that may hinder the broadening and deepening of both intrastate and interstate water markets.

The COAG commitment requires New South Wales to immediately remove all institutional barriers to the temporary and permanent trade of water entitlements that are not applied to protect the environment or ensure the practical management of trading. For the most part, New South Wales' generic trading rules are consistent with COAG requirements. Nevertheless, a number of trading rules in water sharing plans appear to go beyond that which may be necessary to manage potential environmental impacts or the practicalities of water trading.

The Commission identified the use of blunt and broad restrictions on trade, and considers that managing the potential impacts for which they are designed could be better addressed through more robust planning and allocation processes.

The NSW Natural Resources Commission will be reviewing trade restrictions in water sharing plans in the fifth year of all current water sharing plans (2009). The Natural Resources Commission is then expected to justify continuing any restriction that is not aimed at protecting the environment or ensuring the practical management of trading. To meet its COAG commitments, New South Wales will need to ensure that any trading rules that present a potential barrier are removed or amended, or provide a robust public benefit case for their continuance.

New South Wales passed legislation in late 2005, for commencement in January 2006, to require irrigation corporations to permit, and continue to allow, permanent trade to the four per cent interim threshold (or financial penalties will be imposed), as stated in its COAG commitment.

Queensland and New South Wales have made some progress in developing interstate trading arrangements for the Border Rivers. The Commission notes, however, that considerable additional effort and goodwill will be required to have the necessary arrangements in place by mid-2006 (the timetable currently indicated by these jurisdictions). The Commission urges the two states to continue to work towards this end.

The Commission has made a separate finding in relation to progress in meeting commitments to open up water trade in the southern Murray-Darling Basin which is covered in the box below, and cross-referenced in the findings and recommendations for Victoria and South Australia.

*Box 1 - Southern Murray-Darling Water Trading Progress*

This finding and recommendation applies to the southern Murray-Darling Basin states—New South Wales, Victoria and South Australia.

For this assessment, New South Wales, Victoria and South Australia were to demonstrate that, by June 2005, they had taken all necessary steps, including making corresponding legislative and administrative changes, to enable exchange rates and/or tagging of water access entitlements, in order to enable the expansion of interstate trade in the southern Murray-Darling Basin (in accordance with clauses 63 (i) and (ii) of the National Water Initiative).

The legislative arrangements for interstate water access entitlement tagging in the southern Murray-Darling Basin are in place in New South Wales. However, Victoria and South Australia have not yet put corresponding administrative arrangements in place that will allow for tagging based trade across state borders. Nor have the three states developed all the arrangements necessary for practically managing tagged interstate trade once it becomes administratively possible.

All states have been actively participating in the Murray-Darling Basin Commission pilot project for permanent interstate trade. Furthermore, New South Wales, Victoria and South Australia have previously agreed (in the Murray-Darling Basin Commission context) that a system of exchange rates would be used to enable the expansion of permanent interstate trade. In this context, all states had been working for a number of years to develop a matrix of exchange rates. In the second half of 2005, New South Wales rejected the modelled exchange rate, insisting that tagging should be used for interstate trading.

As a result, at 1 January 2006, water was unable to be traded between all three states in the terms of the COAG commitment because the necessary steps had not been collectively taken by New South Wales, Victoria and South Australia. Furthermore, the continuing stalemate - with New South Wales not agreeing to trade using the Murray-Darling Basin Commission determined exchange rate matrix and the inability of Victoria to deliver tagged trade until it introduces the necessary administrative arrangements (mid-2007), and South Australia's lack of a timetable for tagging - means that meeting the COAG

commitments in this area will continue to be delayed. In addition, the Commission notes that there are other matters still to be settled to operationalise trading in the southern Murray-Darling Basin (including changes to Schedule E to the Murray-Darling Basin Agreement which provides the institutional and regulatory framework for the operation of interstate trade in this part of the Basin).

The failure of southern Murray-Darling Basin states to reach agreement on the necessary arrangements is preventing the further opening up of the interstate water trading market as required by the COAG commitments, representing a major setback to the COAG water reform process.

The Commission recognises that considerable effort has been made by all three jurisdictions to progress the development of interstate trading arrangements. Nevertheless, it appears that interstate trade between all states in the southern Murray-Darling Basin is unlikely to be enabled before 1 July 2007 at the earliest.

The Commission also notes that states are developing bilateral arrangements to allow some interstate trade before July 2007. The Commission understands that New South Wales and Victoria have explored arrangements whereby they can trade using a manual water access entitlement tagging system. At the time of drafting this report, Victoria and South Australia were close to finalising an agreement to allow for trade between those two states using exchange rates.

However, while each state is making some progress towards expanding interstate trade on a bilateral basis, they have manifestly not met their collective commitments to open up interstate trade of permanent water entitlements across the southern Murray-Darling Basin.

The Commission notes the advice of the three southern Murray-Darling Basin states that they are working toward a tagging-based trading system across all jurisdictions by July 2007; however, the Commission considers this an unacceptable delay because it is two years behind the National Water Initiative timeframe for implementation of this key element of water reform.

Also, the Commission is concerned at the prospect of further slippage by the states in meeting these commitments.

In the Commission's view, it is critical to maintain momentum on the further expansion of interstate water markets – permanent and temporary – to realise many of the gains of national water reform.

Given the states' failure to meet their commitment in respect of a major element of the COAG water reforms, and in view of the Commission's concerns about the prospect of further slippage, the Commission recommends a suspended National Competition Policy payment penalty of five per cent for each southern Murray-Darling Basin state. The Commission recommends that this payment be recoverable if the states collectively demonstrate, to the Commission's satisfaction, compliance with the following conditions by 1 January 2007:

- that water access entitlements can be permanently traded freely between all interstate sources in the southern Murray-Darling Basin (beyond the existing limitations of the Murray-Darling Basin interstate trade pilot) in accord with the initial COAG National Water Initiative commitment to open up permanent water trade in this region
- that any remaining barriers (for example, in the way water entitlements are specified and converted, administrative barriers, unjustified trading rules, or unacceptable transaction costs) that may affect potential trade have been identified, and
- that there are timely and sufficient steps being taken to overcome any such remaining barriers.

The Commission signals now its intention to recommend that the suspended payments become permanent deductions if the three states collectively are not able to demonstrate, to the Commission's satisfaction, compliance with the above conditions by 1 January 2007.

#### Best Practice Water Pricing and Institutional Arrangements

**On the whole, New South Wales has satisfactorily met its COAG commitments with regard to water pricing and institutional reform.**

**With regard to metropolitan water storage and delivery pricing, New South Wales has met its COAG commitments in terms of consumption-based pricing, cost recovery, dividends, and tax equivalents. The Commission notes**

**that New South Wales' progress in meeting its COAG commitments regarding cross-subsidies and community service obligations will depend on the outcome of the next Independent Pricing and Regulatory Tribunal (IPART) price determination, which is due in the first half of 2006.**

**The Commission considers that New South Wales has made satisfactory progress in meeting its rural and regional pricing commitments. The Commission notes the current IPART price determination process is considering a number of issues relevant to these commitments, including the proposed removal of New South Wales Government subsidies to State Water. The Commission considers it critical that price paths recognise the adjustment that moving to full cost recovery may mean for rural water users in practice. The Commission will continue to monitor New South Wales' progress in this area.**

**New South Wales has not met its COAG commitment to separately identify and report Murray-Darling Basin Commission water resource management costs. The Commission notes that IPART is examining this issue as part of the current review of prices in New South Wales.**

**New South Wales has largely satisfied its COAG commitments for recovery of water planning and management costs by New South Wales Government entities. The Commission notes the current role of IPART in reviewing these costs and determining, in particular, whether they are justified in light of the efficient levels of service provided by the Department of Natural Resources in managing the states water resources. The Commission notes also that no information was provided on the level of public consultation and education about water resource management charges as part of this assessment.**

**New South Wales has met its COAG commitments with regard to ensuring adequate processes are in place to safeguard the environment prior to new infrastructure development or the release of unallocated water. Nevertheless, the Commission considers that the level of public consultation on the proposed – albeit now deferred – Sydney desalination plant has so far been inadequate to engender public confidence that the proposed investment will be demonstrated to be economically viable and ecologically sustainable. The Commission will maintain a watching brief on decisions made on the Sydney**

desalination plant with regard to the extent to which the economic viability and ecological sustainability of the plant is established before any works start.

New South Wales has met its COAG commitment to report on the extent to which environmental externalities are identified, and are incorporated into and recovered through pricing regimes.

The Commission considers that New South Wales has met its commitment in providing information on the effectiveness of new institutional arrangements.

#### Integrated Management of Water for Environmental and Other Public Benefit Outcomes

##### *Institutional Arrangements*

New South Wales is making satisfactory progress towards meeting its COAG commitment in this area. New South Wales is continuing to develop management and institutional arrangements to support implementation of the environmental water provisions under its *Water Management Act 2000*. This includes creating and identifying the environmental water management role of catchment management authorities. Additionally, statewide policies and principles for managing environmental water have been developed. The Commission is concerned, however, that performance monitoring programmes have not been implemented for the 31 water sharing plans that commenced on 1 July 2004, despite the inclusion of indicators and targets to measure environmental performance being included in the plans.

The Commission notes that a number of catchment management authorities began public consultation activities on the 'macro' planning process in late 2005, and that all authorities will undertake public consultation in early 2006. The Commission is concerned that, in the macro planning context, New South Wales has not described any existing or planned activities for educating stakeholders, third parties and the wider public about the environmental and other public benefits associated with allocating water to the environment.

##### *Water Recovery for Environmental Outcomes*

New South Wales is satisfactorily progressing its COAG commitment in this area. The Commission accepts that New South Wales has given due regard to COAG water recovery

principles when designing its two proposals currently listed on The Living Murray Eligible Measures Register.

New South Wales develops water recovery projects with the involvement and support of affected landholders and communities, and the Commission also acknowledges that New South Wales will conduct targeted stakeholder information sessions on both proposals currently listed on the Eligible Measures Register during 2006.

##### *Water Resource Accounting*

New South Wales is satisfactorily progressing its COAG commitments in this area. Through its involvement in a national process to benchmark water accounting systems, New South Wales has committed to provide full access to its existing water accounting and entitlement registry systems and to other relevant water databases.

New South Wales is working to improve the assessment of connected systems, through the development of process models that will allow the impacts of various groundwater extraction scenarios on streamflows to be predicted.

For regulated systems, a range of water information—including information on water use, temporary transfers and storage, and river flow data in New South Wales—is publicly available through New South Wales' free online registers and information systems. New South Wales is currently participating in a national process to develop national water accounting and reporting guidelines that will be applied to its current systems and new systems.

##### *Urban Water*

New South Wales is satisfactorily progressing its COAG commitments in this area. With regard to demand management, Water Efficiency Labelling and Standards Scheme commitments have been met. Additionally, New South Wales has commenced a process to evaluate existing 'icon' water sensitive urban developments.

##### *Community Partnership and Adjustment*

New South Wales has not met its COAG commitments with regard to public consultation, particularly with regard to the transparency of the science and socio-economic analyses underpinning water planning. This finding is consistent with that for water planning, and it has been raised in previous National Competition Policy assessments and submissions.

New South Wales considers that COAG commitments regarding engagement of stakeholders where adjustment is required were partly addressed through a 10 per cent limit on the reduction in water access for licence holders in the development of the first round of water sharing plans for regulated rivers. While the Commission notes that this limited the level of adjustment required, it does not consider that this arbitrary figure has necessarily helped New South Wales and affected water users to deal with significant instances of overallocation. The Commission notes the considerable consultation on adjustment measures, which was undertaken in developing the groundwater water sharing plans that are due to commence in July 2006.

#### National Water Quality Management Strategy

Overall, New South Wales is making satisfactory progress towards meeting its COAG commitments with regard to the National Water Quality Management Strategy (NWQMS). New South Wales provided particular detail on its development of marine water quality objectives and the review and refinement of water quality monitoring arrangements since the 2003 National Competition Policy assessment.

The Commission is concerned, however, that New South Wales has not demonstrated any linkages between the various strategies it is undertaking to implement the NWQMS, to ensure that a consistent approach across all catchments is maintained. It is also concerned that not all non-metropolitan water utilities have reported on their compliance with the Australian Drinking Water Guidelines for the 2003–04 period. This compliance remains an outstanding concern from the 2003 National Competition Policy assessment.

## VICTORIA

### Implementation

Overall, Victoria has made satisfactory progress towards its COAG commitments under this assessment item. Victoria has yet to provide the Commission with a final National Water Initiative implementation plan for accreditation. Victoria has reviewed one, and commenced to review another, cross-border agreement. None of the Murray-Darling Basin jurisdictions has indicated when it will review the 1992 Murray-Darling Basin Agreement.

#### Water Access Entitlements and Planning Framework

##### *Water Access Entitlements*

Overall, Victoria has met its COAG commitments in this area. Victoria is progressing incorporation of the National Water Initiative architecture, particularly entitlement unbundling and establishing an environmental water reserve, into its legislative regime. Bulk entitlements have been converted for all but two systems identified in Victoria's 1999 implementation programme. Progress is being made towards implementation of a compatible, publicly accessible register for all water access entitlements and trades. Public consultation and education processes are in place for the introduction of its entitlement regime.

The Commission strongly supports Victoria's approach to the full unbundling of water entitlements. Nevertheless, the Commission is concerned that, while current Victorian legislation provides for unbundling, the conversion process and establishment of new water registers for regulated systems in northern Victoria is not due to be completed in practice until July 2007, and for other regulated systems until 2007–08. Furthermore, following conversion and separation of the water share from the delivery obligation and the water use licence, Victorian legislation requires that no more than 10 per cent of water rights in each supply system can be untied from land or owned by a non-water user (including the environment and interstate buyers). For the purposes of water trading, this effectively retains the link between water and land title for 90 per cent of water entitlements. As noted below, the Commission urges Victoria to remove the provision, or provide for its early sunset.

*Environmental and Other Public Benefit Outcomes*

For the purpose of this assessment, Victoria has met its COAG commitments in this area. Incorporating the National Water Initiative architecture into its regimes for managing environmental water resources has commenced. The Commission is concerned, however, that the volume of water specified for the environment will not be sufficient to meet all environmental objectives for some time to come. This is because existing consumptive water use remains the primary consideration in the determination of the reserve volume or allocation when it is initially established. The Commission is concerned also that the process for determining environmental water reserves may not be fully transparent.

The Commission will continue to monitor Victoria's progress in this area.

*Water Planning and Addressing Currently Overallocated and/or Overused Systems*

Victoria has made some progress towards meeting its COAG commitments in this area. Victoria's water management arrangements—legislative and administrative—are generally in line with national principles. While Victoria has technically achieved most of the 2005 National Competition Policy assessment items for this area, the Commission is concerned about the lack of clearly specified timeframes for fully addressing overallocation in stressed systems and about the complexity of Victoria's water planning architecture. Following on from this, the Commission is concerned about Victoria's capacity to deliver on-the-ground improvements in allocations for the environment in stressed systems as a matter of priority. The Commission will continue to monitor Victoria's progress in this area.

*Assigning Risks for Changes in Allocation*

Victoria has met its COAG commitments in this area. Victoria will not adopt the specific risk assignment framework set out in the National Water Initiative, but will apply its own framework as outlined in its statewide management plan *Our Water Our Future*. The Commission will continue to track Victoria's progress to ensure its actions for risk assignment remain in line with the National Water Initiative.

*Indigenous Access*

Victoria has met its COAG commitments in this area. Victoria has adequate arrangements in place for the incorporation of Indigenous water issues into its water planning processes, including the recognition of the possible existence of native title rights to water.

*Interception*

Victoria has met its COAG commitments in this area. Victoria is progressing integration of interception activities into the state's water allocation framework. Policies are in place to deal with interception of overland flows, and studies are underway to incorporate landuse changes, such as the conversion of rural lands to plantation forestry.

*Water Markets and Trading*

Enabling legislation to facilitate expanded intrastate and interstate trade in Victoria is in place; however, the legislative reforms will not be implemented until 2007. Furthermore, aspects of the reforms themselves are considered to continue to pose potentially significant barriers to full and open trade.

The 10 per cent limit on non-water users' holdings of entitlements will effectively continue the linkage of water entitlements to land for 90 per cent of entitlements in Victoria. In this way, Victoria is consciously introducing a new and potentially entrenched barrier to trade, despite its COAG commitments to remove trade barriers. Victoria's position is that the limit will not be reached in the near future and that there is a review mechanism that includes consultation. The Commission is concerned that such a measure may become entrenched in Victoria's trading arrangements, becoming difficult to lift or remove. The Commission urges Victoria to remove the provision, or provide for its early sunset.

*Southern Murray-Darling Basin Trading Progress*

The Commission has made a separate finding in relation to Victoria's progress in meeting commitments to open up water trade in the southern Murray-Darling Basin which is covered in Box 1 under New South Wales Findings and Recommendations.

In relation to this matter also, the Commission notes with concern that Victoria has not as yet implemented the interim

threshold limit to allow four per cent permanent trade out of irrigation areas, despite the introduction of complementary arrangements in other jurisdictions.

#### Best Practice Water Pricing and Institutional Arrangements

Overall, Victoria has satisfactorily met its COAG commitments with regard to water pricing and institutional reform.

With regard to metropolitan water storage and delivery pricing, Victoria has met its COAG commitments with respect to cost recovery, dividends and cross-subsidies.

Victoria has made significant progress in meeting its rural and regional pricing commitments, although, as Victoria has acknowledged, it has not fully met its COAG commitments to disclose River Murray Water and Murray-Darling Basin Commission costs, and to allocate the appropriate share of these costs to entitlement holders. In part, progress in this matter will depend on efforts being made in other Murray-Darling Basin jurisdictions..

Victoria has made significant progress towards meeting its COAG commitments for recovery of water planning and management costs, and regarding the release of unallocated water. It is not clear to the Commission whether the Victorian Government is recovering the costs of developing and administering planning and management activities; nor is it clear whether rural authorities' water planning and management costs will be identified in the water plans submitted to the Essential Services Commission. The extent to which planning and management costs are recovered from customers is also unclear.

Victoria has made some progress towards meeting its COAG commitments with regard to accounting for environmental externalities, but further work is required. In particular, the Commission will look for Victoria to demonstrate the extent to which the environmental levy is used to recover the cost of broad resource management activities *versus* addressing environmental externalities. The Commission will also look for environmental contributions to be appropriately attributed to the different sectors and to individual water authorities.

Victoria has an economic regulator, the Essential Services Commission, which is a statutory authority independent of government and responsible for setting prices. In performing its functions, it also undertakes public reporting and consultation. The Essential Services Commission does not report to the same minister as water service providers.

#### Integrated Management of Water for Environmental and Other Public Benefit Outcomes

##### *Institutional Arrangements*

Victoria has made satisfactory progress towards meeting its COAG commitments in this area. Victoria has statutory recognition of environmental water including the establishment of an environmental water reserve and assigns management of the environmental water reserve to catchment management authorities.

Victoria will allow the temporary trading of bulk entitlements, and access entitlements within a bulk entitlement, held specifically for environmental purposes, and the state is committed to annually reporting on the state's water resources.

Each of the planning instruments supporting the Victorian Water Allocation Planning Framework—regional river health strategies, sustainable water strategies, streamflow management plans—include consultation phases and public education activities.

##### *Water Recovery for Environmental Outcomes*

Victoria has made satisfactory progress towards meeting its COAG commitments in this area. The Commission is satisfied that Victoria gave due regard to COAG water recovery principles when designing the Goulburn–Murray and Lake Mokoan water recovery projects, which are both listed on The Living Murray Eligible Measures Register. The Victorian Government decided to undertake the Goulburn–Murray and Lake Mokoan water recovery projects following extensive investigations and public consultation.

##### *Water Resource Accounting*

Victoria has made satisfactory progress towards meeting its COAG commitments in this area.

Through its involvement in a national process to benchmark water accounting systems, Victoria is committed to provide full access to its existing water accounting and entitlement

registry systems and to other relevant water databases. In June 2005, Victoria released its first state-wide water accounts, the *State Water Report 2003–2004*, which reported on Victoria's water resource availability, allocation and use for surface water, groundwater and recycled water in each of Victoria's 29 river basins. The report also identified emerging trends.

Victoria's water register, which is under development (for commencement in 2006–07), will include requirements for environmental water accounting. Victoria is participating in the national process to develop national water accounting and reporting guidelines.

#### Urban Water

Overall, Victoria has made satisfactory progress against its COAG commitments in this area. Victoria has played a key role in the development of the Water Efficiency Labelling and Standards Scheme. Additionally Victoria has commenced a process to evaluate existing 'icon' water sensitive urban developments.

#### Community Partnership and Adjustment

Victoria has made satisfactory progress towards meeting its COAG commitment in this area. Victoria's Water (Resource Management) Act 2005 requires the minister to establish directions for consultation in the water planning processes and, where needed, when compensation is required when reconfiguration plans lead to on-farm water entitlements being adjusted.

#### National Water Quality Management Strategy

Victoria has met its COAG commitments in this area. Continued implementation of the key elements of the NWQMS occurs through the framework prescribed in the Victorian River Health Strategy and its implementation. In addition, the Victorian Government refined its administrative arrangements for water quality monitoring in early 2005.

## QUEENSLAND

### Implementation

Queensland has made satisfactory progress towards meeting its COAG commitments in this area. Queensland has yet to provide the Commission with a final implementation plan for accreditation. In relation to cross-border agreements, the Lake Eyre Basin Agreement is being reviewed; however, considerable time is being taken to finalise the new Border Rivers Intergovernmental Agreement with New South Wales. The Commission urges both governments to conclude effective arrangements for the Border Rivers as soon as possible. Furthermore, none of the Murray-Darling Basin jurisdictions has indicated when it will review the 1992 Murray-Darling Basin Agreement.

### Water Access Entitlements and Planning Framework

#### *Water Access Entitlements*

Queensland has made some progress towards meeting COAG commitments in this area. A comprehensive system of water entitlements, which meet the requirements of the National Water Initiative framework, has been established through Queensland legislation. The conversion of water entitlements to this new system is linked to the rollout of resource operations plans for each catchment. As such, only five of the 23 plan areas across the state have converted licences. As noted below, the Commission is concerned about the pace of this rollout. Queensland is making good progress in developing a compatible register for entitlements and trades, and is participating in national working groups to complete this by 2006. Extensive public consultation on entitlements is undertaken during the water planning process.

#### *Environmental and Other Public Benefit Outcomes*

Queensland has made some progress towards meeting COAG commitments in this area. Queensland has begun incorporating the National Water Initiative requirements into its water entitlement, planning and management arrangements. Water resource plans—implemented through resource operations plans—provide for a legally secure flow regime for surface water for environmental and other public benefit outcomes. As at December 2005, these flow regimes had been implemented in only six planning areas to date. Considerable time is being taken to address environmental



water in groundwater systems, although there are interim arrangements in the most stressed areas to manage extractions (typically through a moratorium on additional extractions).

*Water Planning and Addressing Currently Overallocated and/or Overused Systems*

Queensland's water resource plans, which are implemented through resource operations plans, have legislative backing. The provision of water for ecosystems is based on the best available science and any trade-offs between the environment and consumptive use is transparent and justified. Considerable consultation is undertaken during the development of management plans. The Commission considers that integration of catchment management arrangements could be improved across the state.

Despite the effective water planning processes and the generally high quality of the water resource plans and resource operations plans considered for this assessment, the Commission is seriously concerned about the time being taken to finalise resource operations plans in Queensland catchments.

Queensland has not met the timeline committed to in its 1999 implementation programme for the substantial completion of water allocations by 2005; nor has Queensland met its own timeline provided in the 2004 National Competition Policy assessment for the completion of 13 resource operations plans by the end of 2005, including for the Condamine–Balonne system. As of December 2005, only two resource operations plans (and no water resource plans) had been finalised since the 2004 National Competition Policy assessment. Consequently, the Commission has reduced confidence that Queensland will meet its new timeline to complete planning for all systems by 2009.

In Queensland, finalising resource operations plans is integrally linked to converting water licences to water entitlements, and establishing the conditions to trade water entitlements. Delays in rolling out these plans, therefore, has a direct bearing on the implementation of these fundamental elements of water reform in Queensland. It also has implications for the way in which stakeholders perceive Queensland's implementation of water reform commitments and their consequent support of the water reform task.

The Commission therefore considered recommending a penalty for Queensland as a reflection of the depth of the Commission's concerns about the rollout of water reforms on the ground.

On balance, the Commission decided not to make a recommendation of a penalty for Queensland in view of the underlying quality of water planning processes and practices in Queensland, and the fact that - based on the current state of knowledge - none of Queensland's surface water systems are likely to be overallocated.

In addition, the Commission was able to secure certain commitments from Queensland in relation to its water planning. Queensland has confirmed that it intends to make every effort to complete water resource plans and resource operations plans according to the schedule provided to the Commission. Under this schedule, 13 resource operations plans would be completed (or amended) by July 2007.

Furthermore, Queensland will:

- continue to finalise high quality water resource plans and resource operations plans in priority areas
- reduce timelines for finalisation of plans wherever possible, without compromising quality, through process improvements (including legislative amendments) and policy approaches
- review consultation timelines and implications of calls for extensions, in liaison with the Commission
- permit, by way of regulation under the *Water Act 2000*, permanent trading of Interim Water Allocations in agreed SunWater Water Supply Schemes, in advance of finalising corresponding resource operations plans, and
- administratively implement at least some of the flow management and monitoring requirements, as stated in the finalised Condamine and Balonne Water Resource Plan, prior to finalisation of the resource operations plan.

The Commission considers these commitments represent a credible approach to achieving the shared objective of Queensland and the Commission to maintain quality plans and to secure the benefits of water reform as soon as possible.

*Assigning Risks for Changes in Allocation*

Queensland has met its COAG commitments in this area. Queensland has a process and timetable in place for incorporating the National Water Initiative risk assignment framework into its legislative and administrative regimes. Of concern is that water licences in areas not covered by a current resource operations plan remain outside any compensation regime until planning is finalised; this planning is progressing only slowly across the state.

*Indigenous Access*

Queensland has met its COAG commitments in this area. Queensland has in place adequate arrangements for the incorporation of Indigenous water issues into its water planning processes. Community consultation activities, which are undertaken during plan development, are required under legislation to include Indigenous representatives. Any native title rights to water are identified at the same time.

*Interception*

Queensland has met its COAG commitments in this area. Specific controls are in place to address interception of overland flow in catchments in the south-west of the state. Considerable work continues to develop the policy and administration arrangements governing overland flow. More broadly, overland flow and other interception activities are addressed through the planning process and, over time, will need to fully address COAG commitments contained in the National Water Initiative.

*Water Markets and Trading*

Queensland has made some progress towards meeting its COAG commitments on water trading. Queensland has established a legislative regime to enable permanent intrastate trade, but remains in the early stages of implementation of the necessary administrative arrangements for water trading. Resource operations plans are required to create tradeable water allocations, separate from land title, and specify the relevant trading rules. As noted above, as at December 2005, the water planning process has been completed for only six basins.

Because the opening of opportunities for water trade in allocations is explicitly linked to the pace of water planning in the state, the Commission is seriously concerned that the continuing delays in the completion of resource operations plans severely limits permanent trade in the state and

Queensland's ability to meet its COAG commitments.

Queensland has provided for some interim allocations in some areas. The allocations remain attached to land; they are tradeable only by un-attaching them from the seller's land title and re-attaching them to the buyer's land title.

Queensland and New South Wales have made some progress in developing interstate trading arrangements in the Border Rivers. The Commission urges the two states to continue to work to have the necessary arrangements in place by mid-2006 (the current timetable).

Rules for changes to water allocations (trading rules) in the finalised resource operations plans reflect environmental objectives and are generally applied to manage potential environmental impacts and the physical constraints of the system only.

Queensland has legislated to allow the use of exit fees (or other charges) to manage the potential third-party impacts (including so-called 'stranded' infrastructure assets) that may result from trade out of an irrigation distribution area. Queensland will need to continue to monitor the use and level of exit fees and charges to ensure they do not become a barrier to trade.

*Best Practice Water Pricing and Institutional Arrangements*

On the whole, Queensland has satisfactorily met its COAG commitments in regard to water pricing and institutional reform.

With regard to metropolitan water storage and delivery pricing, Queensland has met its COAG commitments for full cost recovery. In addition, the state's dividend policies comply with COAG commitments. Queensland has also made satisfactory progress towards meeting its COAG commitments for full cost recovery for rural systems, and is making progress towards demonstrating that regional systems are achieving full cost recovery. The Commission notes that with regard to rural systems, the government is in the process of finalising its policy position on SunWater pricing for the next five years and that lower bound costs have increased since the last price determination in 2000. The Commission will continue to monitor how the next determination affects price paths for full cost recovery in rural systems.

With regard to rural water provision, Queensland has met its COAG commitment to make community service obligations and cross-subsidies transparent. Rural community service obligations are separately funded and are reducing over time, and significant progress has been made towards ensuring the same occurs in regional areas. Queensland met its COAG commitment to report on the outcome of its review on recovering the costs of water planning and management, and has made progress towards demonstrating the extent to which water resource management costs are being recovered.

Queensland has made significant progress towards meeting its COAG commitments for recovery of water planning and management costs. Queensland has demonstrated that costs associated with providing water extraction licences are fully recovered; however Queensland did not provide information about the extent to which licence fees reflect the private benefits derived from being licensed. Queensland has met its COAG commitment to transparently handle and publicly report water resource management costs. Queensland also made some progress towards meeting its COAG commitment to ensure independent review or setting of water resource management charges; however, the Commission considers that a process involving greater independence and transparency would better meet this COAG commitment.

Queensland has met its COAG commitment to ensure environmental outcomes are achieved with regard to unallocated water — that all other avenues for meeting demand have been carefully examined, and that market based mechanisms are employed in the release of unallocated water.

Queensland has met its COAG commitments with regard to environmental externalities by reporting on the identification and recovery of environmental costs. Queensland has also demonstrated that use of a statewide externality charge was not appropriate, and that environmental externalities would be better addressed through water planning and management charges and through management plans, with outstanding externalities dealt with on a case-by-case basis using a variety of measures including a locally tailored charge.

Queensland has: reported on the role of its economic regulator; outlined the processes for addressing conflicts of interest; and has reported on the public reporting and consultation aspects of the independent Queensland Competition Authority. The Commission will maintain a watching brief on the use of the Queensland Competition Authority because its effectiveness depends on the extent to which the Queensland Government chooses to formally involve the Authority in scrutiny of pricing matters.

#### Integrated Management of Water for Environmental and Other Public Benefit Outcomes

Queensland is making satisfactory progress towards meeting its COAG commitment in this area.

The *Water Act 2000* has improved the state's ability to plan for significantly interconnected groundwater and surface water systems. A number of water resource plans are currently being amended to include common water sharing arrangements in areas with significantly interconnected systems. The Commission notes that Queensland has identified the Department of Natural Resources and Mines as its environmental water manager.

The Commission understands that water resource plans and resource operations plans together describe the monitoring and review procedures for assessing whether environmental water outcomes are being met. Because these activities are the responsibility of the Department of Natural Resources, Mines and Water, the Commission is concerned that Queensland does not yet have arrangements for the independent review of water resource plan outcomes.

Public consultation processes for water resource planning include the establishment of technical advisory panels, community reference panels and water advisory groups. Queensland has not described any existing or planned activities for educating the affected interests and the wider public (as distinct from the community reference panels) about the environmental and other public benefits associated with allocating water to the environment.

### Water Resource Accounting

Overall, Queensland has made satisfactory progress towards meeting its COAG commitments in this area. Through its involvement in a national process to benchmark water accounting systems, Queensland has committed to provide full access to its existing water accounting and entitlement registry systems and to other relevant water databases.

In relation to environmental water accounting, Queensland is of the view that an environmental water register is not applicable for Queensland, because environmental flows are provided through a rules-based approach in the water resource planning process. Queensland has maintained that it is unable to report environmental volumes pertaining to such rules-based water in any type of environmental water register. This is not consistent with its COAG commitments, to which Queensland had agreed to develop a register of new and existing environmental water, showing all relevant details of source, location, volume, security, use, environmental outcomes sought, and type. Environmental water covers all water provided for the environment, whether that water is held under an environmental entitlement or provided on a rules basis. As such, Queensland is not yet making satisfactory progress towards meeting its COAG commitments to environmental water accounting.

Queensland advises that detailed annual reports are published for the Cooper Water Resource Plan and those basins covered by resource operations plans. Queensland is currently participating in a national process to develop national water accounting and reporting guidelines that will be applied to existing and any expanded systems.

### Urban Water

Overall, Queensland has made satisfactory progress against its COAG commitments in this area. Queensland has met its Water Efficiency Labelling and Standards Scheme commitments.

Queensland has a number of initiatives in place to encourage and facilitate the adoption of water sensitive urban design. Queensland appears to have initiated some processes to review these approaches or evaluate existing 'icon' water sensitive urban developments have been initiated.

### Community Partnership and Adjustment

Queensland has met its COAG commitment in this area. Queensland's public consultation processes, particularly those undertaken during the development of water resource plans and resource operations plans, inform a range of stakeholders and community members on issues relevant to water planning and specific to individual catchments. Specific mechanisms include technical advisory panels, community reference panels and water advisory groups.

To date, Queensland has judged it unnecessary to provide adjustment assistance consequent to changes in water entitlements.

### National Water Quality Management Strategy

Queensland has made satisfactory progress towards its COAG commitment in this area. Since the 2003 National Competition Policy assessment, Queensland has developed draft environmental values and water quality objectives for South East Queensland waterways, the Mary River Basin – Great Sandy Region and the waters of Douglas Shire. The government has also released the *Draft Queensland Water Quality Guidelines* for public comment. In addition, Queensland has initiated a review of the 2001 *South East Queensland Regional Water Quality Management Strategy*, and it has continued to recognise the NWQMS in its water planning processes.

## WESTERN AUSTRALIA

### Water Access Entitlements and Planning Framework

#### *Water Access Entitlements*

Overall, Western Australia has not met its commitments in this area. The conversion of water access entitlements to entitlement systems in line with the principles and timeframes of its 1994 Water Reform Framework commitment is not complete. A publicly accessible system for registering water access entitlements and trades, which includes recognition of third party interests, is maintained and Western Australia has reported on the public consultation and education processes for its entitlement arrangements. Consultation on the proposed new entitlement system has been carried out as part of the review of the *Rights in Water and Irrigation Act 1914*, known as the Irrigation Review. The Irrigation Review has been completed and the Western Australian Government is considering how it will implement the recommendations of the review. A key recommendation of this review is to ultimately remove the linkage of water entitlements and land title. In the interim, Western Australia has two statewide policies in place that in its view ensure that current entitlement arrangements are not a significant barrier to trade.

#### *Water Planning and Addressing Currently Overallocated and/or Overused Systems*

The information provided by Western Australia in its report for this 2005 National Competition Policy assessment, and through supplementary discussions with Commission staff has provided some confidence that Western Australia is making progress, especially over the past year or so, with respect to water planning.

While the Commission is concerned that the identified overallocated systems will not be addressed in a timely manner, the Commission notes the increased importance provided to water planning recently, as demonstrated through the efforts underpinning planning for the Gngangara and Yarragadee Mounds, the Irrigation Review, and the formation of the Department of Water. The Commission also fully acknowledges the greater difficulties inherent in understanding planning for, and managing groundwater resources.

Nevertheless, the Commission's review of Western Australia's progress has highlighted some significant concerns.

Western Australia has not substantially completed the water planning programme as agreed in 1999 and updated for the 2004 National Competition Policy assessment. Nor has Western Australia substantially completed plans to address any existing overallocation for all river systems and groundwater resources. Both of these commitments were to be fulfilled by the end of 2005. Only one water management plan has been finalised since the 2004 National Competition Policy assessment.

The Commission is concerned with the pace of addressing overallocated systems in Western Australia. Systems with high consumptive water demand have identified allocation limits referred to as interim arrangements until a water management plan is finalised. Where use approaches this limit the system is prioritised for management planning. This prioritisation however, does not immediately trigger any specific requirements such as commencement of water management planning development or modification of possibly inappropriate allocation limits.

The Commission considers that Western Australia has not demonstrated a clear, consistent framework and methodology for developing water management plans. Nor, in the Commission's view, has Western Australia yet demonstrated a consistent decision making process for determining the level of planning required in different water systems across the state. Sensibly, Western Australia prioritises its water systems for planning on the basis of competition for water and the level of allocation of the water resource. Nonetheless it is unclear how variations in the information required, consultation, and other aspects of plan development are prioritised for different water systems. As a result of Western Australia's varying application of water planning arrangements, it is therefore unclear if the ARMCANZ/ANZECC National Principles for Provision of Water for Ecosystems are being fully applied in practice.

On the basis that Western Australia has not met its commitments in this area for substantially completing plans, including those for overallocated systems, by the end of 2005, and on the basis that Western Australia has not yet demonstrated a clear framework for water management

planning for its water systems in line with its COAG commitments, the Commission recommends a suspended penalty of five per cent of Western Australia's 2005-06 competition payments.

The Commission further recommends that this suspended penalty be able to be recouped by Western Australia if it can demonstrate to the Commission's satisfaction by June 2007 that it has made significant progress in improving its water planning processes and practices, in particular for overallocated systems, in line with COAG commitments and with the recommendations of the Irrigation Review.

#### Water Markets and Trading

Western Australia has made some progress toward meeting its commitments in this area. Western Australia has removed some restrictions to water trade through amendments made to the *Rights in Water and Irrigation Act 1914* in 2001. In addition, the government released statewide rules to facilitate trading within water systems. Local trading rules are also incorporated into water management plans specific to the locality.

The response to the Irrigation Review report of July 2005 is currently investigating the state's trading and entitlements system. However, the Commission is concerned that a response which does not separate water from land would be inconsistent with the requirements of Western Australia's COAG commitments.

There is also concern at the level of government intervention in the market, where the approval/ disapproval of trades can occur on grounds other than environmental or third party concerns. It is considered that a fully functioning market in water is hindered though these trading rules, particularly those rules designed to manage concerns about speculation and perceived non efficient uses.

#### Best Practice Water Pricing and Institutional Arrangements

With regard to metropolitan water charges, Western Australia has made significant progress toward meeting its COAG commitment to achieve full cost recovery. The Commission notes some progress has been made toward enhancing the transparency and public reporting of community service obligations.

With regard to rural water charges, Western Australia has made some progress towards moving to upper bound pricing, and demonstrating that price paths are in place for increasing the cost recovery of irrigation schemes, albeit over long time frames. Western Australia has made little progress toward achieving lower bound pricing for regional areas for customers of the Water Corporation, though both Busselton Water and AQWEST do achieve lower bound cost recovery.

The entire community service obligation provided to the Water Corporation is publicly reported, The community service obligation is not, however, disaggregated to provide the required transparency with regard to the level of subsidy provided to each of rural, and regional sectors and between individual irrigation schemes. In addition, the Commission is concerned with the use of community service obligation payments to fund the difference between revenue received by the Water Corporation for regional and rural schemes and the upper bound of cost recovery.

With regard to recovering the costs of water planning and management and licence provision, Western Australia has made little progress. In addition, there is no identification or recovery of environmental externalities. However, Western Australia is considering the cost recovery of licence provision in response to the Irrigation Review and progress to achieve adequate public consultation and education about water management charges has been made.

With regard to the Kwinana desalination plant, Western Australia has met its commitment to demonstrate that its decision to proceed with the plant is based on economic and environmental assessments. However, greater transparency and public consideration of alternatives would have enhanced the economic assessment process undertaken by the Water Corporation.

Western Australia does not use market based instruments for the release of unallocated water. However, Western Australia has made significant progress to ensuring environmental outcomes are adequately addressed prior to the release of unallocated water, or the issue of new entitlements.

Western Australia has demonstrated that the duties of the independent regulator (Economic Regulation

Authority) are undertaken with sufficient transparency and public consultation. However, the degree to which the recommendations are given considered by the Western Australian Government remains uncertain. Western Australia has also demonstrated continued participation in benchmarking activities for metropolitan and rural service provision.

#### Community Partnership and Adjustment

The Commission considers that Western Australia has met its commitment in this area. Western Australia consults publicly on water reform matters. For example, the Department of Water has established two Water Resource Management Committees to help with the management of groundwater resources and development of water management plans. The Commission notes that Western Australia intends to encourage community and stakeholder input into the development of its strategic plan for water (the State Water Plan) and subsequent regional water plans.

#### National Water Quality Management Strategy

The Commission considers that Western Australia has made satisfactory progress towards meeting its COAG commitment in this area. Western Australia has continued to implement elements of the NWQMS through its State Water Quality Management Strategy (SWQMS) since the 2004 National Competition Policy assessment. Six of Western Australia's seven Natural Resource Management regions have developed Regional Natural Resource Management Strategies that will implement the *State Water Quality Management Strategy No. 6* (SWQ6) within the state's inland waters. SWQ6 is also being implemented in coastal waters, including Cockburn Sound, and Exmouth Gulf and the Pilbara.

Western Australia has continued to progress implementation of the NWQMS guidelines it nominated as priorities for 2004-05. While the Commission expected Western Australia to have completed implementation of these guidelines for this assessment, the Commission nevertheless acknowledges that Western Australia is actively incorporating these guidelines into regulations, water quality protection notes and best management practice manuals.

## SOUTH AUSTRALIA

### Implementation

Overall, South Australia has made satisfactory progress towards meeting its COAG commitments for this element of the assessment. South Australia has yet to provide the Commission with a final implementation plan for accreditation. South Australia has commenced a review for one cross-border agreement, but issues of consistency with the National Water Initiative are not being addressed. None of the Murray-Darling Basin jurisdictions, including South Australia, has indicated when the 1992 Murray-Darling Basin Agreement will be reviewed.

### Water Access Entitlements and Planning Framework

#### *Water Access Entitlements*

Overall, South Australia has met its COAG commitments in this area. Legislative arrangements for allocating water resources relate only to prescribed water resource areas. Licensing arrangements exist neither for areas outside prescribed water resource areas, nor for the additional types of water resources found in areas prescribed for only one type of water. Licence conversion is complete in all but one prescribed water resource area (scheduled for July 2007).

South Australia has a publicly accessible register for all water access entitlements and trades, and is participating in national processes for developing a nationally consistent register by 2006. Public consultation and education on the state's entitlement regime is carried out by regional boards that ensure community involvement in water planning activities.

#### *Environmental and Other Public Benefit Outcomes*

South Australia has met its COAG commitments in this area. South Australia has begun incorporating the National Water Initiative architecture for the provision of water for environmental and other public benefit outcomes into its water entitlement, planning and management regimes. Water allocation plans, prepared for prescribed water resource areas, provide water for the environment through specific water licences, and through rules on consumptive use that make available water not allocated for a specific use in a consumptive pool. South Australia does not manage water for environmental purposes outside prescribed water

resource areas; however, prescribed areas account for a high percentage of the state's available water resources. South Australia also has arrangements in place for assessing the environmental risk of water systems.

*Water Planning and Addressing Currently Overallocated and/or Overused Systems*

South Australia has made significant progress towards its COAG commitments in this area. Policy approaches have been developed in line with the ARMCANZ/ANZECC National Principles for the Provision of Water for Ecosystems, including providing legislative backing. An integrated catchment management approach has been adopted across the state.

South Australia has completed water planning for the areas identified in its 1999 implementation programme, and it is continuing to progress identification of stressed areas requiring formalised planning. Water allocation plans are developed using the best available science; however, the Commission considers that there are issues with the transparency of the trade-offs between the environment and consumptive use, and with the clarity of determining environmental water requirements. Public consultation and education has been well-addressed, and this is expected to continue with the introduction of a new system of water planning arrangements.

*Assigning Risks for Changes in Allocation*

South Australia has made little progress towards its COAG commitments in this area. South Australia appears to have effective arrangements in place to reduce water allocations, where required, with the agreement of entitlement holders and without compensation. However, it has not, to date, indicated whether it intends to integrate the risk assignment framework outlined in the National Water Initiative, or adopt a framework of its own. This matter will continue to be monitored by the Commission.

*Indigenous Access*

South Australia has made significant progress towards its COAG commitments in this area. Water planning processes are obliged to not interfere with native title rights to water in South Australia. There is, however, no clear demonstration of consideration of Indigenous rights to water during the development of water allocation plans. An Aboriginal

Statewide Advisory Committee has been formed, which could oversee incorporation of Indigenous issues into water planning processes.

*Interception*

South Australia has met its COAG commitments in this area. Overland flow development is dealt with under water allocation plans for the four currently prescribed surface water resource management areas. South Australia has progressed management of interception from other landuses, and issues of landuse change, in some areas—particularly in the south-east of the state.

*Water Markets and Trading*

South Australia has taken steps to build an effective legislative and administrative framework to enable water trading and has removed all institutional barriers to temporary trade of water entitlements. South Australia has also removed institutional barriers to permanent intrastate water trade. The major irrigation trusts in South Australia have voluntarily lifted their annual permanent trade out of their areas to the interim limit of four per cent of total licence allocation. South Australia needs to finalise necessary legislative arrangements to provide the basis for the ongoing removal of barriers to permanent trade out of irrigation districts.

The potential impacts of trade on the environment and existing water users are managed through the use of water transfer criteria specified in the relevant water allocation plan.

South Australia continues to apply a 20 per cent reduction factor to water allocations traded (permanently or temporarily) in the North Adelaide Plains, as a precautionary measure to reduce the demand for groundwater until sustainable extraction limits are better defined. The Commission considers, however, that the use of a reduction factor is a disincentive to trade—especially where trade may be a useful mechanism to help move towards sustainable levels of extraction. The Commission considers that South Australia needs to complete its assessment of sustainable extraction limits as soon as possible.



*Southern Murray-Darling Water Trading Progress*

The Commission has made a separate finding in relation to South Australia's progress in meeting commitments to open up water trade in the southern Murray-Darling Basin which is covered in Box 1 under New South Wales Findings and Recommendations.

*Best Practice Water Pricing and Institutional Arrangements*

While there has been progress in water pricing and institutional reform in South Australia, the information provided for the purpose of this assessment has not satisfied the Commission that, overall, South Australia is meeting its COAG commitments in these areas.

South Australia has met its COAG commitments with regard to metropolitan water storage and delivery, dividends, and cross-subsidies. However, there are some outstanding issues for South Australia to address which are detailed in the assessment.

The Commission notes that the performance of regional water businesses in South Australia is not reported separately, and so it may be difficult for South Australia to report on cost recovery for these businesses. The Commission notes that community service obligations are paid to SA Water to provide water to some country locations at less than total economic cost. It is difficult for the Commission to assess the appropriateness of these community service obligation payments because South Australia has not provided information on the number of water and wastewater services in country areas for which a community service obligation is deemed necessary.

With regard to Murray-Darling Basin Commission costs, South Australia has made little progress in meeting its COAG commitments. South Australia will undertake additional work on this issue in 2006 in conjunction with the South Australian Murray-Darling Basin Natural Resources Management Board. The Commission will maintain a watching brief on South Australia's progress with this work, and will look to ensure that Murray-Darling Basin costs are being transparently identified.

South Australia has not demonstrated that it transparently handles, recovers and reports costs associated with resource management activities attributable to either the

Department of Water Land and Biodiversity Conservation or the Natural Resource Management Boards. The Commission considers that South Australia will need to demonstrate greater transparency in this area in order to meet its COAG commitments.

South Australia has made some progress towards meeting its COAG commitments to ensure adequate processes are in place to support investment in new or refurbished infrastructure, and to evaluate the economic and ecological sustainability of public sector programmes. South Australia has not, however, sufficiently demonstrated that it has met its COAG commitments regarding the release of unallocated water. It is not clear to the Commission that the South Australian Government has in place a process for assessing the impact on the environment before any new entitlements are issued, or that environmental outcomes will be adequately met prior to any release of unallocated water.

With regard to environmental externalities, the Commission considers that South Australia has not reported adequately on the extent to which three main levies—the environmental enhancement levy, the Save the River Murray Levy and the catchment levy—are used to address environmental externalities, nor on how the levies are transparently attributing environmental costs to water users.

The recommendations of the Essential Services Commission of South Australia are, for the most part, being implemented as reported in the *Transparency Statement for Water and Wastewater Prices in Metropolitan and Regional South Australia*. The adequacy of the public consultation process in the Essential Services Commission's pricing inquiries is not clear to the Commission.

*Integrated Management of Water for Environmental and Other Public Benefit Outcomes**Institutional Arrangements*

South Australia has made satisfactory progress towards meeting its COAG commitment in this area. South Australia has recently: established Natural Resources Management Boards under the *Natural Resource Management Act 2004* as its environmental water managers; incorporated ecosystem health monitoring and review procedures for measuring environmental outcomes in water allocation plans; and required water allocation plans to recognise

and conjunctively manage different types of resources, for example interconnected groundwater and surface water systems.

The water allocation planning process incorporates public consultation and education through public meetings and formal public comment periods upon the release of draft water allocation plans.

#### *Water Recovery for Environmental Outcomes*

South Australia has made satisfactory progress towards meeting its COAG commitment in this area. South Australia has established the *Environmental Flows for the River Murray* strategy for achieving water recovery for significant ecological assets under The Living Murray's 'First Step' decision, which clearly identifies the actions to recover the required water.

Despite South Australia not having invested in any water recovery projects at the time of this 2005 National Competition Policy assessment, the Commission considers it likely that South Australia will develop timely water recovery proposals and investment packages.

#### *Water Resource Accounting*

South Australia is satisfactorily progressing its COAG commitments in this area.

Through involvement in a national process to benchmark water accounting systems, South Australia has committed to provide full access to its existing water accounting and entitlement registry systems and to other relevant water databases.

South Australia's environmental water allocations are currently recorded in its licensing system, the Water Information and Licensing Management Application. Additionally, South Australia is currently participating in the national process to develop national water accounting and reporting guidelines

#### *Urban Water*

South Australia has not yet met its COAG commitments in relation to the national Water Efficiency Labelling and Standards Scheme because the relevant legislation has not been passed.

South Australia has made some progress towards meeting its COAG commitments in the innovation and capacity building for water sensitive cities—a number of initiatives are in place to encourage and facilitate the adoption of water sensitive urban design. South Australia appears to have initiated some processes to implement these approaches or evaluate existing 'icon' water sensitive urban developments.

#### *Community Partnership and Adjustment*

South Australia has made satisfactory progress towards meeting its COAG commitment in this area. While South Australia provided little information on its processes for managing adjustments to water access entitlements, where needed, the Commission nevertheless understands that the South Australian government has been able to work with water licence holders to effectively reduce entitlements when this has been required by the condition of the resource. The Natural Resources Management Act 2004 prescribes a detailed community consultation process for the development of water allocation plans, including through the Natural Resources Management Boards.

#### *National Water Quality Management Strategy*

South Australia has made satisfactory progress towards meeting its COAG commitment in this area. South Australia implements the key elements of the NWQMS through its Environment Protection (Water Quality) Policy 2003. South Australia has incorporated the NWQMS into its Draft State Natural Resource Management Plan by requiring all regional natural resource management plans to be consistent with the Environment Protection (Water Quality) Policy 2003.

South Australia has also revised its statewide ambient water quality programme in response to a review that was completed in 2003. The programme has expanded from 150 to around 300 monitoring sites located across the state.

## TASMANIA

---

### Implementation

Overall, Tasmania is making satisfactory progress towards meeting its COAG commitments for this element of the assessment. Tasmania was a late signatory to the National Water Initiative, having signed a year after other signatory jurisdictions in June 2005 and is expected to provide the Commission with a finalised implementation plan in the first quarter of 2006.

### Water Access Entitlements and Planning Framework

#### *Water Access Entitlements*

Tasmania has made significant progress towards meeting its COAG commitments in this area. Tasmania has established a comprehensive system of water entitlements that has legislative backing. Tasmania has made some progress towards completing conversion of all licences, and the issuing of bulk entitlements for water authorities is progressing. Tasmania has a register for water entitlements and trades and is participating in national processes to develop a nationally consistent register. Consultation and education processes for Tasmania's entitlement regime has been satisfactory.

#### *Environmental and Other Public Benefit Outcomes*

Tasmania has met its COAG commitments in this area. Tasmania has a legislative framework for incorporating environmental objectives into water resource planning and management. It has also progressed incorporation of the National Water Initiative architecture for provision of water for the environment and other public benefit outcomes. Water for the environment is provided through either the full environmental water reserve, or a water provision for the environment (which is less than the full environmental water requirement). Both forms of environmental water are provided under agreed planning arrangements in stressed systems.

#### *Water Planning and Addressing Currently Overallocated and/or Overused Systems*

Tasmania has made some progress towards meeting its COAG commitments in this area.

Tasmania has progressed water resource planning through water management plans and environmental flow studies,

although it is taking considerable time to complete water management plans for those systems identified in its 1999 implementation programme. Tasmania has adapted its water planning processes in response to the problems encountered in developing the plan for the Great Forester system. Tasmania also integrates catchment management across the state.

The Commission notes that Tasmania is improving its methods for determining environmental water requirements, through use of a more holistic approach to this matter. The Commission retains some concern about the transparency of non-environmental trade-offs that are incorporated into environmental provisions. Consultation and education processes have been greatly improved in Tasmania since the release of the first water management plan. Despite the concerns the Commission has with Tasmania's planning methods and timeframes, it recognises that Tasmania has taken steps to better understand and improve its systems and methods for water planning and management.

#### *Assigning Risks for Changes in Allocation*

Tasmania has made little progress towards meeting its COAG commitments in this area. Tasmania has a basic risk assignment framework, which applies in areas with a finalised water management plan. This framework does not fully meet the requirements outlined in the National Water Initiative. A timeline for integrating a risk assignment framework into its entitlement and planning regimes across the state has not been provided. It is not clear, as yet, if Tasmania will adopt the framework outlined in the National Water Initiative or an alternative approach.

#### *Indigenous Access*

Tasmania has made little progress towards meeting its COAG commitments in this area. Tasmania has no requirement under legislation or state policy for considering Indigenous water access rights in its water planning processes. There is scope for Indigenous issues to be addressed in the development of water management plans; however, no such issues of Indigenous access or native title have been dealt with in the four plans finalised to date.

*Interception*

Tasmania has met its COAG commitments in this area. Tasmania considers that its current arrangements for licensing and development approvals sufficiently deal with interception and it is not currently intending to carry out any associated legislative or administrative changes. Tasmania is expected to address interception resulting from land use change in the near future.

*Water Markets and Trading*

Tasmania has made significant progress in meeting its COAG commitments for water trading. Tasmania has established effective legislative and administrative arrangements for water trading, commensurate with the relatively small water market and limited physical water market opportunities in the state.

The separation of water licences from land title both within and outside of irrigation districts provides the basis for trade in water licences.

Trading rules for unregulated systems are generally applied only to manage potential environmental impacts and the physical constraints of the system. The use of trading zones in Tasmania further aids the practical management of trading, including managing environmental or third party impacts.

Tasmania has a public entitlement register that defines entitlements and registers third-party interests. The approval of registered third parties is required before a trade may proceed.

*Best Practice Water Pricing and Institutional Arrangements*

With regard to metropolitan water storage and delivery pricing, Tasmania has met its COAG commitments in terms of cost recovery and made progress in terms of consumption-based pricing, cross-subsidies and community service obligations. However, based on the information provided by Tasmania, the Commission remains unclear about whether the dividends being paid in Tasmania reflect commercial realities and stimulate a competitive market outcome.

The Commission recognises Tasmania's progress with regard to meeting rural and regional pricing commitments, particularly in relation to full cost recovery and

consumption-based pricing. For regional systems, Tasmania has made some progress towards meeting its COAG commitments with regard to cross-subsidies and community service obligations. The Commission notes that Tasmania considers the removal of community service obligations to be exclusively a council decision. Regardless, Tasmania's COAG commitments require it to consider, where practicable, alternative management arrangements aimed at removing the need for ongoing community service obligations.

Tasmania has made significant progress towards addressing its COAG commitments for recovery of water planning and management costs and the identification and recovery of externalities. The Commission notes that Tasmania has externally reviewed water planning and management costs through the Department of Treasury and Finance. To fully meet its COAG commitments, Tasmania is required to demonstrate that prices to recover resource management costs are being independently set or reviewed.

The Commission considers that Tasmania has met its COAG commitments with regard to assessing the ecological sustainability of the Meander Dam infrastructure proposal prior to works commencing. In respect of the project's economic viability, Tasmanian officials indicated that economic viability of the Dam proposal did not require further analysis. The Commission does not share this view. The Commission considers that it would have been prudent to review the economic viability of the proposal, given changes in economic conditions and the costs of the project since the last major review of the project on behalf of the Tasmanian Government in 2003. The Commission's own desktop review of economic viability indicated that the project was still likely to be economically viable. The Commission notes that the Tasmanian Government is yet to raise private sector funding through the sale and lease of water entitlements, or through any other identified means. The future financial viability of the Meander Dam project will depend on the government's success in raising these funds.

Tasmania has made satisfactory progress in meeting its COAG commitments regarding the release of unallocated water and demonstrated that appropriate guidelines are in place to assess the impact on the environment prior to new entitlements being issued.

### Integrated Management of Water for Environmental and Other Public Benefit Outcomes

On the whole, Tasmania has satisfactorily met its COAG commitments with regard to water pricing and institutional reform.

The *Water Management Act 1999* provides for adaptive management of surface and groundwater systems (that is, monitoring and reporting programmes established within water management plans), and clearly identifies the environmental and other public benefit outcomes sought for water systems (that is, environmental flow assessments and environmental objectives within water management plans).

The Commission notes that Tasmania has identified the Department of Primary Industries, Water and Environment as its environmental water manager (water entity), unless the Minister for Primary Industries and Water approves an alternative water entity within a catchment to take over the implementation of a plan.

The Commission is concerned that Tasmania does not have arrangements for facilitating independent review of water management plan outcomes. The Commission will look for Tasmania to develop independent audit and public reporting of environmental outcomes to meet its COAG commitments.

Public education, consultation mechanisms and information programmes support the development of water management plans, for example establishment of protected environmental values, and the Conservation of Freshwater Ecosystem Values Project. The water management planning process also incorporates public consultation and education through consultative groups, public meetings and a formal public comment period upon the release of draft water management plans.

### Water Resource Accounting

Tasmania is satisfactorily progressing its COAG commitment to developing national guidelines for reporting water use and management information, and consolidated water accounts. Through involvement in a national process to benchmark water accounting systems, Tasmania has committed to provide full access to its existing water accounting and entitlement registry systems and to other relevant water databases.

Tasmania currently provides public information on water entitlements, use and trades in major surface water systems, through its Water Information Management System. Tasmania is currently participating in a national process to develop national water accounting and reporting guidelines that will be applied to its existing and any expanded systems.

### Urban Water

Tasmania has met its COAG commitments in relation to the Water Efficiency Labelling and Standards Scheme. While Tasmania has released a detailed water sensitive urban design engineering procedure manual, there is little evidence of concrete action to review these procedures or evaluate existing 'icon' water sensitive urban developments.

### Community Partnership and Adjustment

Tasmania has made significant progress towards meeting its COAG commitment in this area. Tasmania's water management planning processes are well-developed, and incorporate public consultation and education through consultative groups, public meetings, and formal public comment periods upon the release of draft water management plans.

Given the lack of overallocated rivers in Tasmania, its processes for assisting those affected by changes in water allocations and requiring adjustment are less well-developed. The Commission considers that Tasmania could clarify its processes for considering adjustment assistance, and the measures it may use to provide such assistance.

### National Water Quality Management Strategy

Overall, Tasmania has made satisfactory progress towards meeting its COAG commitment in this area. Tasmania implements the NWQMS through its *State Policy on Water Quality Management 1997*. Protected environmental values now exist for the majority of Tasmania's fresh and estuarine waters, and they are informing the development of environmental water requirements within water sharing plans; however, the water quality objectives for each catchment need still to be developed before their incorporation in the planning framework. The Tasmanian Government is also implementing the State Water Quality Monitoring Strategy that was approved in 2003.

## AUSTRALIAN CAPITAL TERRITORY

### Implementation

Overall, the Australian Capital Territory has made satisfactory progress in meeting its COAG commitments for this element of the assessment. The Commission has yet to be provided with a final implementation plan for accreditation. None of the Murray-Darling Basin jurisdictions have indicated when the 1992 Murray-Darling Basin Agreement will be reviewed. The Australian Capital Territory is participating in processes to achieve national actions under the National Water Initiative.

### Water Access Entitlements and Planning Framework

#### *Water Access Entitlements*

The Australian Capital Territory has a framework for water access entitlements that meet its COAG commitments, including the National Water Initiative. The territory has made little progress towards completing the conversion of entitlements since the last National Competition Policy assessment. The Australian Capital Territory has yet to finalise its Murray-Darling Basin Cap and, as such, a consumptive pool has yet to be determined for the territory. The Commission accepts that recent natural events affecting the territory (especially the 2003 bushfires) have hampered progress in this area, and urges the territory to resolve these matters quickly.

Due to the small water market, the Australian Capital Territory has a register for entitlements that does not currently include third-party interests. Only a little public consultation and education was undertaken on its new entitlements regime, due to there being so few entitlement holders. The Australian Capital Territory is participating in national processes to develop compatible registers.

#### *Environmental and Other Public Benefit Outcomes*

Overall, the Australian Capital Territory has met its COAG commitments in this area. The Australian Capital Territory's water management plan *Think water, act water* provides a framework for incorporating the National Water Initiative architecture for providing water for environmental and other public benefit outcomes into its water entitlement, planning and management regimes. The Australian Capital Territory provides environmental water through flow conditions, as opposed to a specific entitlement.

### *Water Planning and Addressing Currently Overallocated and/or Overused Systems*

The Australian Capital Territory has met its COAG commitments in this area. The Australian Capital Territory's water planning arrangements are in line with the ARMCANZ/ ANZECC National Principles for the Provision of Water for Ecosystems. Best available science was used to develop environmental flow guidelines for informing water planning outcomes, and this was improved in the context of the Future Water Options Project. Environmental requirements are fully met within Australian Capital Territory systems, whilst recognising existing consumptive allocations. The majority of water consumption in the Australian Capital Territory is for urban purposes. *Think water, act water* provides for catchment-wide adaptive management of the water resource. Public consultation and education for water planning processes were undertaken during the development of *Think water, act water*.

#### *Assigning Risks for Changes in Allocation*

The Australian Capital Territory has not met its COAG commitments in this area. The Australian Capital Territory has not demonstrated a process or a timetable for integrating a risk assignment framework into its water entitlement and planning regime, or at least exploring whether such a framework is necessary with so few entitlement holders. The Commission considers that the Australian Capital Territory needs to address this issue, at least in light of the variables it has identified (climate change, bushfire risks and population growth), and especially considering the Murray-Darling Basin Ministerial Council Cap and subsequent consumptive pool of water resources that have yet to be defined.

#### *Indigenous Access*

The Australian Capital Territory has made satisfactory progress towards meeting its COAG commitments in this area including consideration of Indigenous issues during the development and consultation for *Think water, act water*. There is, however, no statutory requirement for consideration of these issues, nor is the possible existence of native title rights to water included in the territory's water planning processes.

*Interception*

Overall, the Australian Capital Territory has met its COAG commitments in this area. Overland flow capture is addressed through licensing arrangements in the Australian Capital Territory. The Australian Capital Territory recognises that increased runoff due to urbanisation is a priority for the area, and will remain significant in future water planning.

*Water Markets and Trading*

Overall, the Australian Capital Territory has made some progress towards meeting its COAG commitments.

The Australian Capital Territory has established effective legislative arrangements for temporary and permanent intra-territory and interstate water trading, commensurate with the small number of tradeable entitlements in the territory. The delay in the finalisation of the Murray-Darling Basin Ministerial Council Cap on water diversions for the Australian Capital Territory, and the lack of development of the necessary arrangements with other states to facilitate trade, is preventing the opening up of the interstate trading market in the Australian Capital Territory.

The Australian Capital Territory has not developed specific trading rules to manage the potential impacts of trade on the environment, other than an assessment of a transfer applicant's past history with regard to environmental management. More specific arrangements may need to be developed in the event that the impetus for interstate trade does increase.

*Best Practice Water Pricing and Institutional Arrangements*

On the whole, the Australian Capital Territory has met its COAG commitments with regard to water pricing and institutional reform.

The Australian Capital Territory has met its COAG commitments with regard to metropolitan water storage and delivery pricing. Water and wastewater prices are set such that full cost recovery is achieved, and dividend policies comply with COAG commitments. Some progress has been made in relation to a systematic approach to trade waste charges that does not lead to non-transparent cross-subsidies, but the Commission considers that further work is needed in this area.

The Australian Capital Territory has met its COAG commitments to recover costs for water planning and management. With the application of the water abstraction charge, all the costs associated with water planning and management are recovered. In addition, the use of the Independent Competition and Regulatory Commission ensures that the charge is independently reviewed, and that public consultation and education takes place. In addition, the water abstraction is separately reported on customer accounts. The costs associated with the provision and management of licences is also recovered.

The Australian Capital Territory has met its COAG commitments with regard to investment in new or refurbished infrastructure and the release of unallocated water. Economic viability, ecological sustainability and environmental assessments were conducted for new infrastructure proposals in the Australian Capital Territory. With regard to unallocated water, a comprehensive review of avenues to meet increased water demand was undertaken and environmental impacts from the release of unallocated water were considered. Market based mechanisms available for the allocation of unallocated water are specified.

Environmental externalities and their associated costs have been identified by the Independent Competition and Regulatory Commission, and they are recovered through the water abstraction charge. In addition, these costs are transparently passed on to users.

The Australian Capital Territory has met its COAG commitment with regard to the role of its independent regulator. In relation to benchmarking water service providers, the Commission notes that ACTEW, the Independent Competition and Regulatory Commission, and the Australian Capital Territory Government participate in benchmarking activities.

*Integrated Management of Water for Environmental and Other Public Benefit Outcomes**Institutional Arrangements*

The Australian Capital Territory is satisfactorily progressing its COAG commitment in this area. The Australian Capital Territory formally recognises environmental water under the *Water Resources Act 1998*. The Act requires preparation of a water resources management plan, in which environmental

flows take priority over all other uses of water when allocations are determined.

The Environment Protection Authority is identified as the environmental water manager, and is enhancing its understanding of the interaction between groundwater abstraction and surface water baseflows, to improve water management regimes. The Australian Capital Territory has also demonstrated a commitment to monitoring and reviewing the adequacy of environmental water provision and management arrangements under the territory's *Water Resources Management Plan 2004* and *Environmental Flow Guidelines*.

Under the *Water Resources Act 1998* the Australian Capital Territory must also consult the public during the preparation, and any subsequent review, of the Water Resources Management Plan and *Environmental Flow Guidelines*. Accordingly, a public consultation phase informed the recent review these guideline.

#### Water Resource Accounting

Overall, the Australian Capital Territory has satisfactorily progressed its COAG commitment to benchmark existing water accounting systems and environmental water accounting.

Through involvement in a national process to benchmark water accounting systems, the Australian Capital Territory has committed to provide full access to its existing water accounting and entitlement registers and to other relevant water databases. The Australian Capital Territory is also currently participating in the national process to develop national water accounting and reporting guidelines.

Annual data on environmental water allocations and provisions is detailed in the *Australian Capital Territory Water Report*.

#### Urban Water

The Australian Capital Territory has met its COAG commitments in relation to the national Water Efficiency Labelling and Standards Scheme.

The Australian Capital Territory has made some progress towards meeting its COAG commitments in innovation and capacity building for water sensitive cities, with a number of initiatives in place to encourage and facilitate the adoption

of water sensitive urban design. A process to evaluate existing 'icon' water sensitive urban developments to identify knowledge gaps and lessons for future strategically located developments has not been demonstrated.

#### Community Partnership and Adjustment

Australian Capital Territory has met its COAG commitment in this area. Community involvement and public education have been demonstrated by the community engagement process undertaken to develop the *Think water, act water*, and the recent review of the *Environmental Flow Guidelines*. Furthermore, *Think water, act water* involves an adaptive management approach to addressing water resource management that involves public consultation and it is transparent.

Managing adjustment due to reductions in water allocations has not been an issue for the territory, and therefore close community engagement on this issue has not yet been required.

#### National Water Quality Management Strategy

The Australian Capital Territory has made significant progress towards meeting its COAG commitments in this area. Since the 2003 National Competition Policy assessment, the Australian Capital Territory has reviewed its water quality standards and water quality monitoring programmes to make them consistent with the NWQMS (Papers 4 and 7, respectively), as well as continuing to recognise and give effect to the NWQMS through its water planning processes.



## NORTHERN TERRITORY

### Implementation

Overall, the Northern Territory has made satisfactory progress for this element of the assessment. The Commission has yet to be provided with a final implementation plan for accreditation. The Northern Territory is participating in national processes under the National Water Initiative and is progressing steps to include potential cross-border management areas.

### Water Access Entitlements and Planning Framework

#### *Water Access Entitlements*

Overall, the Northern Territory has made some progress towards meeting its COAG commitments in this area. The Northern Territory has a system of licensing that has legislative backing. However, licences do not fully comply with the National Water Initiative, as they are issued for a period of ten years and they are not specified as a share of the resource. Furthermore, the conversion of licences to water entitlements has not commenced and is not scheduled until 2007.

The Northern Territory has a register for all entitlements and trades, although it does not include third-party interests due to what it says is a lack of demand. The Northern Territory is participating in national processes and will therefore have to address third-party interests to develop a compatible register by 2006. Public consultation and education on entitlements is undertaken through the process of developing a water allocation plan.

#### *Environmental and Other Public Benefit Outcomes*

The Northern Territory has met its COAG commitments in this area. The Northern Territory has a framework for managing extractions in the Top End and the Arid Zone to ensure the provision of water for the environment across the territory. These contingent regimes have been developed in response to the lack of scientific knowledge on individual systems, which prevents unique flow rules being developed. Furthermore, through its water entitlement, planning and management arrangements, the Northern Territory does provide specifically for the environment and public benefits under water allocation plans and water control districts.

### *Water Planning and Addressing Currently Overallocated and/or Overused Systems*

Overall, the Northern Territory has made some progress towards meeting COAG commitments in this area. The Northern Territory has integrated ARMCANZ/ANZECC National Principles for the Provision of Water for Ecosystems into its water planning framework, and it is progressing water resource planning through its development of water allocation plans for identified water control districts.

The Commission is concerned, however, that the Northern Territory is taking considerable time to complete water allocation plans for the remaining three systems identified in its 1999 implementation programme.

An integrated catchment management approach—on the basis of good science—has been adopted across the territory, and water for the environment is provided through planning arrangements in the identified water allocation plan areas. In other areas, water for the environment is provided through generic flow rules that have been developed in the absence of adequate science in these systems. Public consultation and education on planning processes is carried out during the development of water allocation plans.

The transparency of the Northern Territory's planning processes is of some concern; however, the Commission notes that the territory has amended its consultation processes following the experience gained in developing the first Ti-Tree Water Allocation Plan.

#### *Assigning Risks for Changes in Allocation*

The Northern Territory has made some progress towards meeting COAG commitments in this area. The Northern Territory intends to develop policies for addressing changes to allocations in its water control districts by 2007. This has not yet been addressed because of the low number of licences in the Northern Territory. It is not clear if these policies will be consistent with the framework outlined in the National Water Initiative, or if an alternative approach will be adopted.

#### *Indigenous Access*

The Northern Territory has met its COAG commitments in this area. The Northern Territory has provisions for addressing Indigenous issues through consultation processes for its

water allocation plans that include addressing any native title rights to water. Further to this, the territory is supporting research into improving knowledge of Indigenous values, including issues of Indigenous water access.

#### *Interception*

The Northern Territory has met its COAG commitments in this area. Licensing arrangements are in place for managing activities for interception of both surface water and groundwater. Furthermore, the territory is taking steps to address impacts of landuse change on interception, including plantation forestry, in water allocation plan areas.

#### *Water Markets and Trading*

The Northern Territory has made significant progress in meeting its COAG commitments in water trading.

Commensurate with the small number of tradeable entitlements in the Territory, effective legislative arrangements for temporary and permanent intra-territory water trading have been established. Trading in water entitlements in the Northern Territory can occur only once the relevant water allocation plan has been finalised.

The Northern Territory has developed appropriate trading rules to manage the potential impacts of trade on the environment and other users through its water allocation plans.

The Northern Territory has an entitlement register that defines entitlements. The Northern Territory is updating its register to allow for the registration of third-party interests in early 2006, and it is working to develop a publicly accessible version of this register.

#### *Best Practice Water Pricing and Institutional Arrangements*

On the whole, the Northern Territory has made satisfactory progress towards meeting its COAG commitments with regard to water pricing and institutional reform.

For metropolitan water storage and delivery pricing, the Northern Territory has met its obligation to ensure that dividend policies comply with COAG commitments. Some progress was made towards achieving full cost recovery for the Darwin water and wastewater operations that are not yet achieving upper bound pricing.

For rural and regional water and wastewater operations, the Northern Territory has made some progress towards meeting its COAG commitments. Little progress has been made to move regional and rural water and wastewater operations to full cost recovery, with only the Alice Springs operations recovering lower bound costs. The Commission notes, with concern, that the pricing reform currently under consideration may result in the continuation of a uniform tariff structure across the territory, without further justification as to the economic efficiency or suitability of this approach.

The Northern Territory has made some progress towards meeting its commitment to the transparent reporting of community service obligations in rural and regional systems. The Commission is concerned that the community service obligations, to date, have not been of a transitional nature. In addition, the Northern Territory has not met its COAG commitment to make cross-subsidies transparent. There is a lack of clarity about the cross-subsidisation necessary from the application of a single tariff across the territory, and about what proportion of the community service obligation paid to the Power and Water Corporation is attributable to the pensioner charge subsidy, and what proportion is due to the application of the uniform tariff.

The Northern Territory has not met its COAG commitments with regard to recovery of water planning and management costs. The Northern Territory Government has chosen not to recover the costs associated with the provision of licences; no information was provided regarding cost recovery of other water resource management and planning activities. Furthermore, no information was provided on the transparent handling and public reporting of water planning and management costs, or the degree of public consultation and education that takes place concerning these costs. The Commission will look for the Northern Territory to remedy this situation as soon as possible.

The Northern Territory has not met its COAG commitments to: identify environmental externalities; demonstrate a move towards identification and cost recovery for environmental externalities; and transparently pass on the costs of environmental externalities. The Northern Territory considers that there is neither enough irrigation nor other water consumption activities to warrant such an exercise. The

Commission considers that the Northern Territory should keep this matter under review, and will do so itself.

The Northern Territory has met its COAG commitments to safeguard against conflicts of interest, and to demonstrate its participation in benchmarking systems. In addition, the Northern Territory has met its commitment to report on the role of the independent economic regulator. As it appears that the reviewing and regulating powers of the Utilities Commission are limited, the Commission will maintain a watching brief on the review of water and wastewater prices set in the Northern Territory.

#### Integrated Management of Water for Environmental and Other Public Benefit Outcomes

##### *Institutional Arrangements*

The Northern Territory has made satisfactory progress towards meeting its COAG commitments in this area. The Northern Territory's legislative and administrative procedures include the requirement that water allocation plans prepared for all declared water control districts must include an environmental water allocation.

The Northern Territory's intention to review its water legislation is an opportunity for the government to formalise a number of current institutional arrangements, including: prioritisation of water allocations for environment and public benefit outcomes ahead of consumptive uses; identification and management of high conservation value rivers and interconnected groundwater and surface water systems; and public reporting of environmental outcomes within water allocation plans.

The water resource planning process incorporates public education and consultation through the establishment of community steering committees and water advisory committees.

##### Water Resource Accounting

Overall, the Northern Territory has made satisfactory progress towards meeting its COAG commitments in this area. Through involvement in a national process to benchmark water accounting systems, the Northern Territory has committed to provide full access to its existing water accounting and entitlement registry systems and to other relevant water databases.

The Northern Territory is currently participating in the national process to develop national water accounting and reporting guidelines. The Northern Territory will then develop reporting arrangements in line with these guidelines.

##### Urban Water

The Northern Territory has not met its COAG commitments in relation to the national Water Efficiency Labelling and Standards Scheme because legislation implementing the scheme in the territory has not been passed.

The Northern Territory has made limited progress towards meeting its COAG commitments in the innovation and capacity building for water sensitive cities, although some initiatives are in place to encourage and facilitate the adoption of water sensitive initiatives.

##### Community Partnership and Adjustment

Northern Territory has made significant progress towards meeting COAG commitments in this area. The Northern Territory has put substantial effort into developing appropriate and effective consultative and community participation arrangements over recent years. These processes have been substantially modified, in response to criticism, since the initial water allocation plan for the Ti-Tree region was developed.

The Commission recognises that the Northern Territory has not yet needed to address adjustment issues resulting from reductions in water access entitlements.

##### National Water Quality Management Strategy

Overall, the Northern Territory has made satisfactory progress towards meeting its COAG commitments in this area. The Northern Territory has demonstrated continued implementation of the NWQMS, through beneficial use declarations and industry codes of practice and environmental guidelines, since the 2003 National Competition Policy assessment.

The Northern Territory continues to recognise and give effect to the NWQMS through its water planning processes. In addition, the Northern Territory continues to review its Drinking Water Quality Program and administer routine modifications to the programme as necessary.

## MURRAY-DARLING BASIN COMMISSION

### Water Planning and Addressing Currently Overallocated and/ or Overused Systems

In the allocation of water to the environment, the Murray-Darling Basin Commission has demonstrated progress in: implementing the Murray-Darling Basin Cap; the 'First Step' of The Living Murray Initiative; and other measures for improving the environmental health of the Murray-Darling system.

### Water Markets and Trading

The Murray-Darling Basin Commission has continued to undertake and coordinate work to promote the expansion of permanent interstate trade in the southern Murray-Darling Basin. A Murray-Darling Basin Commission pilot project has enabled some limited interstate trading between New South Wales, Victoria and South Australia. The project has enabled the development of interstate trading rules, and environmental management procedures to minimise the impacts of interstate trade on the environment and other users in the pilot area. The lessons from the pilot project will help develop expanded interstate trading in the southern Murray-Darling Basin.

The Murray-Darling Basin Commission's *Principles for the Development of Access and Exit Fees* have been used by jurisdictions and irrigation companies in the development of their proposed exit fees. The principles provide a high-level framework for the development of exit fees. The application of these principles allows irrigation supply businesses to exercise significant discretion over such matters as asset valuation methodology, discount rate and planning horizon, and infrastructure renewals. The National Water Commission is concerned that inconsistencies in application of the principles could lead to significantly different outcomes in terms of the size and impact of exit fees. Further development work being undertaken by governments should aim to minimise the risk of exit fees becoming a barrier to expanded intrastate and interstate trade.

The Murray-Darling Basin Commission has indicated that it is close to finalising amendments to the Murray-Darling Basin Agreement (Schedule E), to provide for expanded interstate trade beyond the pilot project, as is consistent

with the COAG water trading reforms detailed in the National Water Initiative. The schedule, which is fundamental to the operation of interstate trade as agreed by the relevant Murray-Darling Basin Commission member jurisdictions, is significantly overdue and this has been a contributing factor in the delays in expanded interstate trade in the southern Murray-Darling Basin.

### Integrated Management of Water for Environmental and Other Public Benefit Outcomes

#### *Water Recovery for Environmental Outcomes*

The Murray-Darling Basin Commission is providing important support to efforts by Murray-Darling Basin governments to recover water for environmental outcomes in the Basin. The Commission notes that the Murray-Darling Basin Commission is providing technical support to assist with implementation of each of the four water recovery packages currently listed on the Eligible Measures Register.

**SCOPE OF  
THE 2005  
NATIONAL  
COMPETITION  
POLICY  
ASSESSMENT**



# SCOPE OF THE 2005 NATIONAL COMPETITION POLICY ASSESSMENT

Parties to the National Water Initiative agreed that the Commission would undertake the scheduled 2005 assessment of States and Territories' National Competition Policy water-related reform commitments. In addition, the Prime Minister and the Western Australian Premier agreed that the Commission undertake the 2005 assessment of Western Australia's National Competition Policy water-related reform commitments. The National Competition Council has previously carried out the National Competition Policy assessment of jurisdictions' progress with implementing the Council of Australian Governments (COAG) water reforms. The Commission's assessment role is confined to water reform and does not extend to other elements of National Competition Policy.

In order to provide a coherent assessment of water reform progress under National Competition Policy arrangements, the Commission sought to make the 2005 National Competition Policy assessment process consistent with the approach taken previously by the National Competition Council. This included developing a water reform assessment framework (available at [www.nwc.gov.au](http://www.nwc.gov.au)), collecting reports and information from jurisdictions, taking into account public submissions, and compiling this comprehensive assessment report.

In its assessment framework, the Commission married commitments made in the 1994 COAG Water Reform Framework<sup>1</sup> with those in the National Water Initiative as the basis for the 2005 National Competition Policy assessment. This reflected the commitment by Parties to the National Water Initiative to continue to meet their existing commitments under the 1994 COAG Water Reform Framework, and to meet them in a way that is consistent with the objectives and actions set out in the National Water Initiative.

This is also consistent with the approach taken by the National Competition Council in its 2004 National Competition Policy assessment. The National Competition Council took regard of the 1994 COAG Water Reform Framework commitments, along with the National Water Initiative commitments to outcomes, actions and timeframes. Together, these sets of commitments provided the framework for reporting on jurisdictions' progress with implementing water reform, and assessing governments'

compliance with reform obligations for the purpose of recommending on 2004-05 competition payments<sup>2</sup>.

Given that Western Australia had not yet signed the National Water Initiative at the time of writing this report, the Commission issued a separate assessment framework for that jurisdiction based on the 1994 Water Reform Framework (also available at [www.nwc.gov.au](http://www.nwc.gov.au)).

Importantly, the 2005 National Competition Policy assessment occurs at the cross-over point between previous National Competition Policy arrangements and future arrangements under the National Water Initiative. Under the National Water Initiative, future assessments of jurisdictions' progress on water reform will be undertaken by the Commission biennially, commencing in 2006-07. The National Water Initiative also provides for the Commission to report to the Australian Government on any outstanding commitments under the 1994 Water Reform Framework.

Jurisdictions are separately developing implementation plans required by the National Water Initiative. Implementation plans will describe how jurisdictions will achieve the actions and timelines agreed in the National Water Initiative. They are due to be accredited by the Commission in the first half of 2006.

In 2006, the Commission will also undertake a baseline assessment of water governance arrangements. The baseline assessment is intended to provide a snapshot of water governance in each jurisdiction. The baseline will be used in the future to assess progress with the National Water Initiative including for the Commission's biennial assessments of jurisdictions' progress with the National Water Initiative. The baseline will draw on information provided in the 2005 National Competition Policy assessment.

<sup>1</sup> The Water Reform Framework was incorporated into the Agreement to implement National Competition Policy and Related Reforms, and has been amended from time to time, including by the 1996 revisions to include groundwater and stormwater, and by the Tripartite agreement of January 1999.

<sup>2</sup> The National Water Initiative commitments were not used by the National Competition Council to assess Western Australia's nor Tasmania's compliance with reform obligations since neither jurisdiction at that time had signed the National Water Initiative.

## 1.1 Summary of National Competition Policy Water Reform Obligations

This is the sixth National Competition Policy assessment of governments' progress with implementation of water-related reforms, following assessments in 1999, 2001, 2002, 2003, and 2004. The 2001 assessment considered governments' implementation of all aspects of the 1994 Water Reform Framework. The 2002, 2003 and 2004 National Competition Policy assessments considered governments' implementation of specific reforms according to the assessment schedule agreed by COAG senior officials for those years.

In line with this schedule, and recognising the new COAG commitment to water reform under the National Water Initiative, the 2005 National Competition Policy assessment considered states and territories' (and where relevant, the Murray Darling Basin Commission's) progress with implementation of the entire COAG water reform agenda. The National Competition Policy assessment covers progress with implementing the 1994 COAG Water Reform Framework commitments, as modified and updated by the National Water Initiative, and new commitments under the National Water Initiative that are due in 2004 and 2005.

To recap, under the 1994 Water Reform Framework governments committed to:

- price water and wastewater services so businesses achieve full cost recovery, with prices set on a consumption basis where cost-effective
- create clearly specified water entitlements separate from land
- recognise the environment as a user of water by allocating water specifically for use by the environment
- encourage intrastate and interstate trading in water entitlements
- implement market based and regulatory measures aimed at improving water quality
- integrate natural resource management and catchment management processes
- implement a range of institutional reforms, including separating the roles of service provision and standards setting and regulation, and ensuring better commercial

performance by water businesses

- employ rigorous economic and environmental appraisal processes before new investment in rural water schemes, and
- conduct public education and consultation programs and ensure stakeholder involvement in significant change issues.

Recognising the continuing national imperative to increase the productivity and efficiency of Australia's water use, the need to service rural and urban communities, and to ensure the health of river and groundwater systems, COAG agreed in 2003 to refresh its 1994 water reform agenda by developing a new National Water Initiative to provide greater certainty for investors in the water industry and for the environment.

The National Water Initiative was signed at the 2004 COAG meeting by the Commonwealth and all State and Territory governments, with the exception of Western Australia and Tasmania. The Tasmanian Government subsequently signed the National Water Initiative on 2 June 2005.

In addition, the signatory governments expect that full implementation of the National Water Initiative will achieve:

- clear and nationally compatible characteristics for secure water access entitlements
- transparent, statutory-based water planning
- statutory provision for environmental and other public benefit outcomes, and improved environmental management practices
- the return of all currently overallocated or overused systems to environmentally sustainable levels of extraction
- the progressive removal of barriers to trade in water and the meeting of other requirements to facilitate the broadening and deepening of the water market to achieve an open trading market
- a clear assignment of the risk arising from future changes in the availability of water for consumption
- water accounting to meet the information needs of different water systems in terms of planning, monitoring, trading, environmental management and on-farm management

- policy settings that facilitate water use efficiency and innovation in urban and rural areas
- responses to future adjustment issues that may have an impact on water users and communities, and
- recognition of the connectivity between surface and groundwater resources with connected systems managed as a single resource.

To achieve these objectives, the signatory governments agreed on reform outcomes and committed to specific policy actions in the following eight areas:

- water access entitlements and water planning frameworks
- water markets and trading
- best practice water pricing
- the integrated management of water for environmental and other public benefit outcomes
- water resource accounting
- urban water reform
- knowledge and capacity building, and
- community partnerships and adjustment.

Parties also agreed under the National Water Initiative to establish the National Water Commission. The Commission comprises seven Commissioners selected on the basis of their expertise in a range of water management, environmental, resource economics and institutional skills. The Commission has the responsibility to oversee the implementation of the National Water Initiative, administer the Australian Government Water Fund and advise the Prime Minister and COAG on water matters. A key specific responsibility is also to undertake this National Competition Policy assessment.

## 1.2 Approach to the 2005 Assessment

While this 2005 National Competition Policy assessment considered jurisdictions' progress across all COAG water reform elements, the Commission was particularly focused on progress in those areas of water reform that are critical to realising the gains sought by COAG. Therefore, the Commission's priorities for the 2005 National Competition Policy assessment were:

- water access entitlements
- water planning for secure ecological and resource outcomes
- addressing overallocation and overuse of water systems
- water trading, and
- water pricing.

In practice water planning is closely linked with addressing overallocation and overuse of water systems, and these two elements are addressed together in the following assessment for each jurisdiction.

In respect of the new commitments under the National Water Initiative that fall due in 2004 or 2005, the Commission was well aware of the delay in the active implementation of the National Water Initiative caused by the dispute between the Australian Government and the States and Territories over National Competition Policy arrangements. The Commission also acknowledged the more recent signing of the National Water Initiative by Tasmania (on 2 June 2005). While the Commission is of the view that the implementation timelines for the National Water Initiative are not extended by these factors, it nevertheless took them into account in its assessment and findings.

The National Water Initiative incorporates two new components in the water reform agenda: water resource accounting and urban water efficiency measures. This is the first National Competition Policy assessment to consider these areas of water reform.

The 2005 National Competition Policy assessment also considered public education and consultation in conjunction with each of the other elements of the water reform agenda, consistent with the direction by COAG senior officials and the agreement by governments to engage water users and stakeholders<sup>3</sup>.

<sup>3</sup> COAG senior officials agreed that public education and consultation obligations should be assessed concurrently with the assessment of a particular reform element. The 2005 assessment will consider public education and consultation activity in relation to all of the reform elements.



With regard to penalties imposed under the National Competition Policy competition payment arrangements, the 2004 National Competition Policy assessment found that governments had achieved satisfactory progress in implementing their National Competition Policy water reform commitments, with the exception of New South Wales and Western Australia.

The 2004 National Competition Policy assessment found that New South Wales had not demonstrated that its water sharing plans allocated appropriate water to the environment in stressed and over allocated systems (while recognising the existing rights of other water users) in accord with its commitments under the 1994 COAG Water Reform Framework. New South Wales received a suspension of ten per cent of its 2004-05 National Competition Policy competition payment. The Commission considered subsequent progress with this reform commitment as part of the 2005 National Competition Policy assessment.

In respect of Western Australia, the 2004 National Competition Policy assessment found that it was still to meet its water industry legislation review and reform commitments, which the Competition Principles Agreement required to be addressed by 30 June 2002. At the time of the 2004 National Competition Policy assessment, Western Australia was still to implement the recommended reforms for 19 water industry regulatory instruments. Western Australia subsequently received a pool suspension of 15 per cent of its 2004-05 competition payment for outstanding legislation review items.

The 2005 National Competition Policy assessment has been a major undertaking for the Commission in its first year of existence (Commissioners were appointed on 10 March 2005, and the Commission office has built up its staff from a starting complement of three employees).

Apart from marrying the 1994 COAG Water Reform Framework commitments with those in the National Water Initiative, the Commission faced a number of particular challenges in undertaking the 2005 National Competition Policy assessment.

Water reform is an ongoing prospect, and there were some significant developments in state and territory water regimes in 2005. These included legislative changes in

New South Wales and Victoria in late 2005, and reviews of water management arrangements in Western Australia and Tasmania. In addition, there has been a lot of activity on water trading by the southern Murray-Darling Basin states through late 2005 and up to the writing of this report. To the extent possible, the Commission has reported on these developments as they relate to this assessment. With the exception of Western Australia<sup>4</sup> and several specific matters in the remaining jurisdictions, the Commission did not seek information from jurisdictions after 31 December 2005 and did not consider developments after 1 February 2006.

In addition, as already noted, the Commission has had to place the 2005 National Competition Policy assessment in the context of both the previous National Competition Policy assessments carried out by the National Competition Council and the future assessment arrangements under the National Water Initiative.

The Commission is particularly conscious of its continuing role in assessing the progress of water reform implementation. To reflect this, the Commission has, therefore, in this year's National Competition Policy assessment:

- broadened the language used to describe jurisdictions' compliance with COAG reform obligations to indicate where commitments have been met, where significant or satisfactory progress has been made, where little or no progress has been made, or where jurisdictions have failed to demonstrate that they have met a commitment
- explicitly noted where the Commission has concerns about an aspect of a jurisdiction's water management regime in order to bookmark those issues for consideration in future assessments under the National Water Initiative, and
- made it clear that any finding made in this assessment (eg that a COAG commitment has been met or that satisfactory progress is being made) is for the purposes of the 2005 National Competition Policy assessment only.

<sup>4</sup> Formal agreement between the Australian Government and the Western Australian Government to the Commission undertaking the 2005 National Competition Policy assessment of Western Australia's water reform progress was confirmed in February 2006.

For the purposes of this assessment the Commission has used the terminology in common usage within each jurisdiction. The Commission notes the significant variation in terminology used across Australia in water management legislation and administrative regimes. While this causes some problems for a national assessment of water reform, the Commission believes that it will have more serious implications over time for achieving commitments (especially in the National Water Initiative) to a whole range of nationally compatible outcomes (eg consistent approaches to water pricing, compatible water registers, compatible institutional and regulatory arrangements for water trading, water resource accounting). The Commission notes that parties to the National Water Initiative have explicitly recognised the importance and desirability of adopting a common lexicon for water use and management in their respective water management frameworks.

### 1.3 The 2005 Assessment Process

As noted earlier in this chapter, the Commission has undertaken the 2005 National Competition Policy assessment process consistent with the approach taken previously by the National Competition Council. This process included the following steps:

- The Commission issued a detailed and comprehensive assessment framework for parties to the National Water Initiative (updating the COAG water reform commitments with those contained in the National Water Initiative) and a separate framework for Western Australia.
- The Commission invited submissions from the public on governments' water reform activity. The Commission wanted, as far as possible, to have access to stakeholder views on governments' reform progress. Submissions were provided by a range of stakeholders including irrigator representatives, other interested water users, and environmental organisations. These submissions were posted on the Commission's website ([www.nwc.gov.au](http://www.nwc.gov.au)). Not all issues raised were relevant to the 2005 National Competition Policy assessment. Where issues were relevant they were considered in the assessment, and brought to the attention of the relevant government.

- Against the assessment frameworks, states and territories provided reports on their progress with implementing their COAG water reform commitments. The Commission sought reports by 2 September 2005. Only one jurisdiction provided its report by this date. A major supplementary report was provided by New South Wales on 18 October 2005 addressing its water planning activities in relation to the 2004-05 suspended competition payments. Notably, the Northern Territory did not provide any information for this assessment until 7 December 2005.
- Subsequent information was requested from all jurisdictions to clarify matters in relation to their reports. In most cases, several requests for additional information were made.
- While Commission staff undertook the great bulk of the assessment task, outside experts were retained to provide specialist advice in a number of areas. In particular, outside experts worked with Commission staff to assess water planning activity in each of the jurisdictions. The approach taken was to examine and assess a sample of water plans in the state or territory<sup>5</sup> using information which was publicly available. Through this approach, the Commission was particularly interested in the transparency of planning processes and planning outcomes in the form of water plans themselves.
- Following discussions with state officials in the development of the assessment report, draft assessment chapters (without the discussion and assessment sections) were provided to each jurisdiction to comment on factual matters.

<sup>5</sup> With the exception of the Australian Capital Territory which has one water plan for the Territory and which had been assessed in the 2004 National Competition Policy

**NEW SOUTH  
WALES**

2



## NEW SOUTH WALES

### 2.1 Implementation

#### Assessment Issues

The Commission is looking for New South Wales, as a signatory to the National Water Initiative, to:

- have completed its National Water Initiative Implementation Plan
- where cross-jurisdictional water sharing agreements exist, have commenced a review of existing agreements to ensure their consistency with the National Water Initiative and identify those instances where any new agreements may be required, and
- have commenced a process to review the 1992 Murray-Darling Basin Agreement for consistency with the National Water Initiative.

**New South Wales provided the Commission with a draft implementation plan in June 2005. This draft was assessed by the Commission and comments were provided back to New South Wales on how the implementation plan could be improved for it to be considered for accreditation.**

**New South Wales provided the Commission with a final implementation plan in late September 2005. At the time of this assessment, the final implementation plan was being reviewed for possible accreditation.**

**In relation to cross-jurisdictional water sharing, New South Wales is currently a signatory to three cross-jurisdiction water sharing arrangements: the 1992 Murray-Darling Basin Agreement (MDBMC, 1992); the Border Rivers Intergovernmental Agreement; and the Snowy Mountains Hydro-Electric Power Agreement.**

**The review process for the 1992 Murray-Darling Basin Agreement had not commenced at the time of this assessment. Signatories to this agreement include the Australian, New South Wales, Victorian, South Australian, Queensland and Australian Capital Territory governments.**

**The original Border Rivers Intergovernmental Agreement has been current since 1946. It was ratified by the *New South Wales-Queensland Border Rivers Act (QLD 1946, NSW 1947)* and relates to the construction of dams and weirs on parts of the Border Rivers and the sharing of water in those works and rivers between the states.**

**A new formal agreement is not expected to be finalised until at least 2006. In the interim, New South Wales and Queensland have agreed to implement a number of initiatives that build on water management in the area.**

**New South Wales reached an agreement with the Australian and Victorian governments over the management and sharing of water resources of the Snowy Mountains Scheme area in 1958. This has been updated by the Water to Rivers agreement. On 13 December 2005 the Australian Capital Territory, New South Wales and Commonwealth agreed to a memorandum on cross-border supply of water from the Australian Capital Territory to New South Wales. The memorandum sets out the broad principles under which water will be supplied.**

**There is no formal agreement for the joint management of the Great Artesian Basin's groundwater resources. New South Wales is a member of the Great Artesian Basin Coordinating Committee—as are the Australian, South Australia, Queensland and Northern Territory governments and stakeholders—which aims to improve resource management in the basin.**

#### Submissions

**The Combined Environmental Nongovernment Organisations (Combined Environmental NGOs) provided comment on the implementation section of the National Competition Policy Assessment Framework (NWC, 2005a) in relation to the activities of New South Wales. The Combined Environmental NGOs raised concerns over the lack of consultation with environmental groups over the content of the New South Wales implementation plan and the fact that the draft implementation plan was not circulated for comment.**

**The New South Wales Irrigators' Council has also indicated its concern over the lack of consultation in the development of the New South Wales' implementation plan. The council was concerned that, at the time of its submission, no framework for consultation had been developed. In the council's view, stakeholders should have input to this workplan and to implementation of the National Water Initiative (COAG, 2004a).**

### Discussion and Assessment

The timetable for New South Wales to complete an implementation plan, and then have it assessed and accredited by the Commission, has been revised. The Commission expects to consider plans for accreditation early in 2006.

The Commission understands that some consultation on New South Wales' implementation plan has been undertaken since submissions for this assessment were received. New South Wales has indicated that it intends to conduct targeted consultation about the finalised implementation plan through the Natural Resources Advisory Council. This will involve distribution of the plan and brief discussions. The Commission requires all National Water Initiative parties to undertake consultation on implementation plans and will be confirming this with New South Wales.

The Commission is concerned at the length of time being taken to finalise the new Border Rivers Intergovernmental Agreement. Until this agreement has been finalised, New South Wales will not be able to meet its COAG commitments for water access entitlements and trading in this area. The Commission expects these issues to be resolved promptly by the New South Wales and Queensland governments.

There have been no reviews of existing cross-jurisdictional water sharing agreements to which New South Wales is a party. The Commission notes that there has been no indication from Murray-Darling Basin jurisdictions on the timing of the 1992 Murray-Darling Basin Agreement review. The Commission also notes that New South Wales does not appear to have any mechanisms in its water reform framework for identifying areas that could potentially require a new water sharing agreement between jurisdictions.

The Commission notes, however, that New South Wales is participating in national processes under the National Water Initiative to carry out water reform activities both within the state and across jurisdictions, with agreed timeframes, to improve water resource management.

The Commission considers that New South Wales has made satisfactory progress towards its COAG commitment in this area.

## 2.2 Water Access Entitlements and Planning Framework

### 2.2.1 Water Access Entitlements

#### Assessment Issues

The Commission is seeking detailed information from New South Wales with regard to its current arrangements for the provision of water access entitlements. The Commission will be looking for New South Wales to:

- have completed the conversion of water access entitlements to entitlement systems in line with the principles and timeframes of its 1994 Water Reform Framework
- demonstrate the commencement of incorporation of the National Water Initiative water access entitlement requirements into its legislative and administrative regimes
- have made significant progress in the development of compatible, publicly accessible systems for registering water access entitlements and trades, including recognition of third party interests (such as the interests of financial institutions), and
- report on the public consultation and education processes in place for the introduction or review of entitlement regimes.

The Commission will also be looking for New South Wales to outline its pathways and demonstrate progress to meet its National Water Initiative in relation to compatible, publicly accessible and reliable entitlement registers.

**The New South Wales Government has legislated to establish systems of water entitlements under the provisions of the *Water Management Act 2000*.**

In June 2004 and December 2005 New South Wales amended its *Water Management Act 2000* to accommodate elements of the National Water Initiative. As part of these amendments, New South Wales adopted perpetual water access entitlements (replacing the previous fifteen year duration) and made provision for term transfers of water access licences (similar to a lease of land).

Water resources in New South Wales are allocated as water licences under the *Water Act 1912* and water access

licences under the *Water Management Act 2000*. The licensing provisions of the *Water Management Act 2000* apply in those areas where water sharing plans have commenced; the licensing provisions of the *Water Act 1912* still apply in the rest of the state.

#### Water Licences

Water licences are the original access entitlements allocated to surface water and groundwater users under the *Water Act 1912*. They cover both the right to extract water and the water supply works. These water licences exist in river and groundwater systems that are not covered by a current water sharing plan.

Water licences are held by landowners and the right to access water is tied to the actual works on the land. Most water licences are approved for five years for general irrigation and ten years for towns. The entitlement to water is expressed as an annual volumetric limit on extraction.

#### Water Access Licences

Water access licences are issued to water users in areas where there is a water sharing plan in effect—in the major regulated systems, some unregulated systems and some coastal groundwater systems. Existing water licences in these areas were converted into water access licences on commencement of a water sharing plan.

Water access licences are allocated to individuals or groups of water consumers. Use of water for basic landholder rights does not require a water access licence.

Commercial water access licences in New South Wales have the following characteristics:

- they are separate from the water use and works approvals (not tied to land title)
- they are allocated in perpetuity
- they entitle the holder to a defined share in the available water in a specific water source (this is expressed as a unit share rather than as a volume per year)
- they are open to a range of water dealings (trade, subdivision, lease)
- they can be used as security for a loan, and
- they have conditions aligned with the relevant water sharing plans.

For local water utilities, their entitlements under the *Water Management Act 2000* are based on the previous entitlement, the safe yield of water supply works or an assessment of reasonable use.

Local water authorities that provide water to towns outside the major metropolitan areas have a specific water allocation attached to their licence. New South Wales plans to review all water utility entitlements every five years. Alternatively, water utilities can apply (subject to a water sharing plan) for an increase in their water entitlement in times of population growth. A water utility will need to demonstrate that it has implemented the Best Practice Management Guidelines for water supply before an increase to its water allocation is approved. It is not required to enter into a water market to purchase more water. If the water source is fully allocated and there is no other suitable supply available, then the increased entitlement will result in a reduced security of supply to supplementary and then general security water access licences.

See Section 2.2.3 on Water Planning and Addressing Currently Overallocated and/ or Overused Systems for discussion on allocation of shares of a resource to all users.

Commercial licences for irrigation and industry have lower priority of supply, but are perpetual and can be traded. Supplementary water access licences in regulated river systems, which replace the former unlicensed access to off-allocation water or high flow licences, have tenure for the life of the relevant water sharing plan and can be traded. Supplementary groundwater licences are issued to assist in the process of adjusting groundwater entitlements and are phased out over the term of the water sharing plan. Special purpose licences (for stock and domestic purposes, for example) have higher priority of supply, cannot be traded separately from land, and are issued for as long as the purpose remains. This last point means that they are open ended but cease to exist when the purpose for which they were granted no longer applies. Existing stock and domestic bore licences will convert to water supply works approvals. These licences are being provided for in water sharing plans.

The volumes of entitlement for these other water licences are based on the previous entitlement, history of use, the safe yield of water supply works, or an assessment of reasonable use.

### Entitlement Conversion

Under the *Water Management Act 2000*, the new water access entitlement arrangements are implemented in those areas where water sharing plans have commenced. Within six to twelve months of a water sharing plan commencing, licence details are checked and licence holders are formally notified of their water licences being converted to water access licences. This process is automatic.

At the time of writing this assessment, New South Wales had gazetted 36 (of 39) first round water sharing plans for the state's major river and groundwater systems.

On 1 July 2004, a total of 31 water sharing plans were implemented, covering some 80 per cent of water extraction in New South Wales. The plans cover the most stressed rivers (the major regulated systems) plus a number of individual unregulated rivers, and five coastal groundwater systems. New South Wales has converted some 7000 Water Act 1912 licences to 11,500 water access licences within these areas, constituting about 25 per cent of licences.

Five water sharing plans have been gazetted for major inland groundwater systems. Licences in these areas will be converted after implementation, which has been suspended until July 2006 to allow for community consultation and finalisation of structural adjustment assistance. About ten per cent of the state's licences will be covered.

New South Wales plans to complete 39 additional water sharing plans under the 'macro' planning process, which will be progressively implemented from July 2007 over most of the state's remaining unregulated subcatchments, and some groundwater sources. Licences in these areas will not be converted until implementation of these water sharing plans. They include about 45 per cent of licences.

The remaining systems in need of water sharing plans require specific water-sharing rules to be developed and the plans will be implemented progressively from 2006 to 2008. These include catchments under interstate agreements, the remaining small, regulated river systems, the greater metropolitan Sydney area, the Barwon-Darling River, and the Great Artesian Basin aquifer system. Licence conversion in these key areas will not be completed until 2008, in line with the schedule for the rollout of each water sharing plan. About 20 per cent of licences are in these systems.

### Water Access Licence Registers

The state's outstanding 1994 COAG Water Reform Framework water access entitlement commitment is to implement a register for water access licences and trades. At the time of the 2004 National Competition Policy assessment there was an operational register, but New South Wales advised that the data were not fully validated. The New South Wales Government also indicated that it would endeavour to introduce indefeasibility of title within three years<sup>1</sup>.

Under the National Water Initiative, New South Wales has committed to put in place pathways by the end of 2004, leading to full implementation by 2006, of compatible, publicly accessible and reliable registers of all water access entitlements and trades.

For the 2004 National Competition Policy assessment, the water access entitlement and registry arrangements in New South Wales were found to be in line with the state's commitments under the 1994 water reform agreement and under the National Water Initiative.

The water access licence register is operated and administered by the Department of Lands. The register records all the legal information about a water access licence in New South Wales, including ownership, tenancy arrangements, encumbrances, share component and water dealings; the register also provides a record of the water title.

The register is searchable through the Department of Lands internet site at a cost of eight dollars per search. Some 10,000, or 90 per cent, of water access licences in the existing water sharing plan areas have been uploaded to the water access licence register.

The Department of Natural Resources also provides the following free online public registers, which provide information about water access licences and approvals:

- water access licences (excluding ownership and security interest details) and their conditions (searchable by water source or individual licence number)
- water supply works and use approvals, including conditions (searchable by water source or individual approval number), and
- water usage (searchable by water source and category of licence).

<sup>1</sup> Indefeasibility of water access licence titles for the licence holders in the initial 31 water sharing plan areas is expected to be available by 2007, and all other areas by 2011.

With regard to trading, the Department of Natural Resources' website holds information about water allocation assignments (temporary trades), including location, volume traded and price (searchable by water source or individual licence number). Information about transfers (permanent water trades) is available on an individual licence basis through the water access licence register administered by the Department of Lands.

New South Wales notes that the Department of Natural Resources intends to also establish a register of permanent trades so that these can be monitored on a water source basis. Data control, security and transfer arrangements, however, first need to be established and coordinated with the Department of Lands.

New South Wales is participating in the development of nationally compatible registers for water access entitlements through an inter-governmental working group under the Natural Resource Management Ministerial Council. See Section 2.3 on Water Markets and Trading for more detail.

#### Recognition of Third Party Interests

Water access licences are progressively uploaded to the water access licence register once the property and ownership details are verified by the Department of Natural Resources. Only once the third-party interests are resolved can the water title be finalised and a water access licence certificate issued by the Department of Lands.

The Department of Natural Resources has been working with the major banks and financial institutions, which hold the majority of mortgages over licences, to finalise this process. Financial institutions must seek the approval of the licence holder before this interest can be registered on the water access licence register.

The Department of Natural Resources has a statutory obligation to advise all relevant security interests of the need to register their interest on the water access licence register. To this end, the department has published two trial notices and expects to publish a statewide notice in early 2006.

As a result of the recent amendments to the *Water Management Act 2000*, security interest holders have three years (increased from two years) from the date licences are converted to have their security interests registered; this is by June 2007 for existing water sharing plan licences.

#### Public Consultation and Education

New South Wales has outlined various consultation activities for introducing its new entitlement regime. With regard to the new licensing arrangements, there has been extensive and ongoing consultation in the development and implementation of the arrangements with key stakeholder groups such as the New South Wales Irrigators Council, New South Wales Farmers Federation, local government, environmental and Indigenous groups, and banking representatives.

New South Wales has indicated that a series of public meetings have been held across the state over the last five years to explain the water sharing plans and new licensing arrangements. In addition, New South Wales has indicated that licence holders have been contacted by mail a number of times. Information sheets, maps and public registers are available on the Department of Natural Resources' website to help the public understand the new arrangements. There is also an email address and free call telephone number available for public enquiries.

#### Submissions

The Combined Environmental NGOs provided comment on issues relating to water access entitlements in New South Wales, raising three main concerns, as follows:

- There are a substantial number of sleeper and dozer licences in New South Wales that, if activated, could place additional pressure on currently over allocated systems. The value of water entitlements is increasing, but New South Wales has not clarified what it is doing to address this issue.
- New South Wales has amended the *Water Management Act 2000* to address provision of water for the environment. The Combined Environmental NGOs see the current wording in the Act as providing for environmental flows to be intermittent only, with no provision for fundamental ecosystem health.
- There is public confusion about where the old *Water Act 1912* applies and where the new *Water Management Act 2000* applies. The majority of consultation on the new entitlement regime in New South Wales so far has been only in areas where a water sharing plan has commenced. Much information is on the Department of Natural Resources website; however, many rural landowners do not have internet access.



### Discussion and Assessment

As noted in the 2004 National Competition Policy assessment, the provisions for entitlements under the *Water Management Act 2000*, are consistent with the entitlement framework specified in the National Water Initiative. New South Wales has incorporated the National Water Initiative water access entitlement framework into its legislative regime, and has started to incorporate the framework into its administrative regime.

Relevant licences in all water sharing plan areas have been converted to water access licences under the new entitlement framework. There are approximately 20,000 licences, however, that remain in areas without a finalised water sharing plan. These have yet to be converted, and will remain unconverted until all planning has been finalised across the state, which New South Wales anticipates will be at the end of 2008. This timeline for conversion of all licences does not meet the 1994 COAG Water Reform Framework .

The Commission notes that New South Wales did not proceed with proposed legislative amendments which would have had the effect of allowing the Minister to increase water entitlements for local water utilities. The Commission considers that such an approach, without requiring alternative options to be examined, including entering a water market, could impact on the security of water access licences and high security water allocations (including those for the environment). The Commission will continue to monitor New South Wales' policy development in this area.

Concern was raised by the Combined Environmental NGOs that numerous sleeper and dozer licences exist, especially in overallocated systems; they could put additional stress on these systems if activated. New South Wales states that water sharing plans manage the impacts associated with the activation of sleeper and dozer licences through long-term average annual extraction limits. The Commission considers that such an approach may then require reduction in extraction limits to be dealt with through the risk assignment framework that New South Wales is adopting, consistent with the National Water Initiative. However, the National Water Initiative itself commits states to have established a pathway for addressing known overallocation as a precursor to the risk assignment framework coming into play.

In summary, the Commission considers that the problem of ongoing overallocation (and the specific pressure brought to bear by sleeper and dozer licences) will not be so easily dealt with by New South Wales. The Commission's concerns about the adequacy of planning in New South Wales in dealing with overallocation is discussed further in Section 2.2.3 on Water Planning and Addressing Overallocated and/or Overused Systems. At the same time the Commission acknowledges that trading can be an effective mechanism to help adjustment to sustainable extraction levels.

Through the current registers in place and the involvement in a cross-jurisdictional work group for developing compatible registers for entitlements and trades, New South Wales appears to be making good progress towards full implementation of a compatible, publicly accessible and reliable register for all water access entitlements and trades by 2006.

New South Wales indicated for the 2004 National Competition Policy assessment that, at that time, the data for the operational entitlement registers were not fully validated, nor was the validation process complete.

The Commission notes the commitment by New South Wales to 'make best endeavours' to introduce indefeasibility of title within three years. The Commission considers that, if realised, indefeasibility would significantly enhance confidence in New South Wales' entitlement regime.

The concern raised by the Combined Environmental NGOs over the amended wording in the *Water Management Act 2000* with regard to environmental water is noted. However, the Commission's initial view is that it is not inconsistent with the National Water Initiative, and more specific environmental water requirements are included in provisions in water sharing plans.

New South Wales has reported on the public consultation and education processes in place for the introduction of the entitlement regime, especially in areas where licences have been converted.

The areas outside the current water sharing plans are to be addressed through the 'macro' planning process. This will involve its own consultation procedures that would cover the areas where the Combined Environmental NGOs suspects that there is confusion about licence conversion. The 'macro' plan consultation is currently scheduled for the end of

2005 to early 2006. The Commission considers it imperative that consultation in this process provide for high levels of transparency and engender greater confidence in the plans.

The Commission is satisfied that New South Wales has made satisfactory progress towards meeting its COAG commitments in this area, while noting that New South Wales has not met its commitment under the 1994 COAG Water Reform Framework for completing licence conversion across the state. The Commission considers that New South Wales should continue to complete the rollout of water sharing plans as quickly as possible while not sacrificing the rigour and transparency of its planning process.

### 2.2.2 Environmental and Other Public Benefit Outcomes

#### Assessment Issues

The Commission is looking for the New South Wales Government to have commenced the process to incorporate the National Water Initiative architecture for the provision of water for environmental and other public benefit outcomes into its water entitlement, planning and management arrangements.

New South Wales has indicated that the *Water Management Act 2000* gives priority to the supply and protection of water for the environment and for other public benefits.

This environmental water is provided through planned environmental water (rules based) and adaptive environmental water.

Planned environmental water is all water not specified as available for extraction. It is provided for by specified rules in water sharing plans, and includes:

- the water in excess of extraction limits
- environmental contingency allowance volumes
- transparent or translucent dam releases
- minimum end-of-system flows, and
- parts of daily flows that are protected by daily extraction limits (these limits vary depending on the rate of flow and the shares are generally fixed and specified in the water sharing plan).

For regulated river systems, water sharing plans contain rules that provide water to meet specified environmental

objectives of the plan. Each plan ensures that extractions will be managed to ensure that the limit specified in the plan is not exceeded. All water sharing plans for regulated river systems set out the proportion of the natural flow that will be preserved to contribute to the maintenance of basic ecosystem health.

The rules are fixed for the ten year life of the water sharing plan and can be amended only by the Minister for Natural Resources with the agreement of the Minister for the Environment. It is not subject to possible volume reductions in the way that shares in extractable water may be. As such, New South Wales considers that planned environmental water has a high security.

Adaptive environmental water is water held under a water access licence that contains specific conditions requiring the water to be committed for particular environmental purposes, as expressed within the objectives of the relevant water sharing plan. For example, the licence may be used for watering of wetlands (either generally or at specified times or under specified circumstances) or simply to provide additional flow at the end of the system.

Adaptive environmental water can arise, for example, when:

- a licence holder may commit part of their licence to be used for environmental purposes in return for public funding of on-farm water savings
- the government may purchase an existing licence and change the conditions of the licence to adaptive environmental water, or
- a new licence may be created and committed for environmental purposes after water savings have been obtained from major system improvements. The category of access licence and the amount of share component would be equivalent to the amount of water saved.

Adaptive environmental water may be temporarily traded when not required for the specified environmental purpose. Adaptive water licences may be held by any individual or organisation; however, water identified in water sharing plans as reserved for adaptive use is managed by the relevant Catchment Management Authority on behalf of the government. The security of adaptive environmental water is the same as the access licence class under which it is dedicated.

If any provisions for environmental water exist in a system before a water sharing plan is implemented, then provisions will be included in that plan for a water access licence to be granted to the environment. This licence would be considered as adaptive environmental water.

Within areas of groundwater use, planned environmental water is ensured through limiting long-term extraction to a proportion of the recharge of each aquifer system. The long-term extraction limit is maintained by specifying the extraction entitlement of each licence.

New South Wales is of the view that limiting long-term extraction to a proportion of the recharge of each aquifer provides the aquifer with a level of long-term storage for environmental purposes. This proportion of recharge is determined on an individual basis and varies within a system from zone-to-zone, depending on the extent of groundwater dependent ecosystems.

Arrangements are somewhat different in areas without a water sharing plan. Although there are no specific provisions for water for environmental and other public benefit outcomes, environmental flows are generally managed on a case-by-case basis through licence conditions and rules for ceasing to pump. Additionally, new licences for commercial purposes (irrigation, industry and mining) are generally no longer being granted.

#### Submissions

The Combined Environmental NGOs noted that they have major concerns that the Act is not being complied with under the water sharing plan process, despite current legislation providing adequate statutory recognition for environmental water. They are of the view that water sharing plans do not reflect the same priority for environmental water as required in legislation. This is due to concern over the planning process having not adequately identified the environmental requirements of a system before the trade-offs with supply for consumption were made.

The Combined Environmental NGOs see this non-compliance as relating in particular to providing the environment with at least the same degree of security of entitlement as water access licences for consumptive use, and to environmental water not being fully accounted for.

#### Discussion and Assessment

New South Wales has incorporated the National Water Initiative architecture for the provision of water for environmental and other public benefit outcomes into its water entitlement, planning and management arrangements. Planned environmental water (rules-based) in New South Wales is high security and fixed for the ten year life of the water sharing plan. In comparison, the security of adaptive environmental water (held under a water access entitlement) is the same as the access licence class under which it is dedicated. Additionally, in cases where the full water entitlement is not needed to fulfil flow requirements for environmental needs, adaptive environmental water can be traded to other users. These provisions are in line with what is required for this assessment.

The Commission notes the view of the Combined Environmental NGOs that water sharing plans do not reflect the same priority for environmental water as required in the *Water Management Act 2000*

The Commission considers that the issue here is not so much that there is insufficient security provided for environmental water entitlements, nor that environmental water is not fully accounted for, but that the process used in water planning to determine the amount of water for the environment is inadequate. This matter is dealt with further in Section 2.2.3 on Water Planning and Addressing Overallocated and/ or Overused Systems.

The water that has been allocated for the environment under a water sharing plan is provided as either flow rules under planned environmental water or as a licence under adaptive environmental water. The Commission notes that environmental water provided under flow rules is only as secure as the compliance regime that helps to ensure that those rules are followed in practice.

New South Wales is currently participating in the national process to develop principles and procedures for environmental water accounting, which are discussed further in Section 2.6 on Water Resource Accounting.

The Commission considers that New South Wales has met its COAG commitments in this area.

### 2.2.3 Water Planning and Addressing Currently Overallocated and/or Overused Systems

#### Assessment Issues

In considering governments' arrangements for allocating water to the environment, in light of guidance provided by the 1994 COAG Water Reform Framework, the ARMCANZ/ ANZECC National Principles and the National Water Initiative, the Commission will expect New South Wales to establish arrangements that:

- are based on the best available science and use strategic and applied research (principles 2 and 11)
- achieve a balance between environmental needs and human use that provides the water needed to achieve the environmental outcomes, while recognising, in systems where there are existing users, the existing rights of those users (principles 1, 4, 5, 6 and 9)
- involve monitoring and adaptive management where the regular assessment of ecosystem health guides water management processes (principle 8), and
- involve stakeholder consultation and transparent processes that are robust, and ensure the timely provision of relevant information to all interested parties (principles 7 and 12).

The Commission is also looking for the New South Wales Government to:

- demonstrate how its water management plans (and related arrangements) address the obligations in the 1994 Water Reform Framework and take account of the ARMCANZ/ ANZECC National Principles, regarding the provisions of water to the environment. In particular, demonstrate consistency of the five gazetted groundwater plans with COAG commitments
- if the water allocated for environmental purposes for particular river and groundwater sources is significantly different from that recommended by the best available science, demonstrate that this decision is based on a robust examination of the socio-economic evidence and taken in the context of an open and transparent community consultation process that makes explicit the trade-offs
- demonstrate that an integrated catchment management

approach has been adopted for the management of water and that planning processes and administrative arrangements reflect an integrated approach to natural resource management

- demonstrate water allocations in all the river systems and groundwater basins identified in its 1999 implementation programme is substantially complete
- be well advanced in preparation of the remaining three first-round water sharing plans, that are consistent with the National Water Initiative water planning framework, and specify a time at which the plans will be gazetted and commence
- provide information on the progress with development of the proposed 'macro' plans and demonstrate these plans will be developed consistent with the National Water Initiative water planning framework
- provide an overview of the public consultation and education processes in place and adopted for water planning and for addressing overallocated and/or stressed resources, and
- report on progress with the determination of overallocated and/or overused systems not covered by its 1999 implementation programme and the pathways being developed to address them.

Furthermore, in order to address the suspended payments from the 2004 NCP assessment, the New South Wales Government needs to:

- provide robust information to support its current environmental allocation arrangements, or
- demonstrate that its environmental allocations are within a range of outcomes that could reasonably be reached on consideration of the best available science and robust socioeconomic evidence.

#### 2004 Suspended Payment

**Under the 1994 COAG Water Reform Framework, jurisdictions were to provide water for environmental needs. This was calculated, where possible, based on the best scientific information available, and having regard to the inter-temporal and inter-spatial water needs required to maintain the health and viability of river systems and groundwater basins. Further to this, Principle 4 of the ARMCANZ/ ANZECC**

National Principles for the Provision of Water for Ecosystems provides that in systems where there are existing users, provision of water for ecosystems should go as far as possible to meet the water regime necessary to sustain the ecological values of aquatic ecosystems, whilst recognising the existing rights of other water users.

As such, the full environmental water requirement should be determined for a system first, and where there is a need to adjust this determined volume or other users' existing entitlements in relation to the water resource available within the system, consultative processes should be adopted to undertake the trade-off between environmental and consumptive allocations. This approach provides for the full environmental requirement to be identified, and allows for a transparent process to determine any trade-offs made.

At the time of the 2004 National Competition Policy assessment, New South Wales had gazetted 36 (of 39) first round water sharing plans that allocate water for the environment in the state's major river and groundwater systems.

The 2004 National Competition Policy assessment found that New South Wales had little public information on the manner in which it considered environmental science in developing the plans. New South Wales had not demonstrated that it had satisfactorily addressed its COAG commitments; ten per cent of its 2004-05 competition payment was suspended as a result. This suspension followed a string of assessments (including deferred and supplementary assessments) since 2001, when the National Competition Council first expressed concerns about the scientific basis and robustness of the analysis underpinning the planning regime.

The following extracts from each National Competition Policy assessment since 2001 illustrates the National Competition Council's concerns about water planning in New South Wales, especially stemming from a lack of information on New South Wales' water planning arrangements and methods:

- in the 2001 assessment the National Competition Council considered it had insufficient information to make an assessment of New South Wales' progress on stressed rivers against the ARMCANZ/ ANZECC National Principles for the Provision of Water for Ecosystems (NCC, 2001a)
- in the 2002 assessment the National Competition Council noted that concerns about timeframes for achieving sustainable resource use and the lack of transparency in water sharing decisions (NCC, 2002). It also called for a supplementary assessment saying it expected to see final plans containing environmental allocations that ultimately provide for an improvement in the condition of the rivers
- in the 2002 supplementary assessment, the National Competition Council considered, among other things, that New South Wales had provided no information to the Council on the manner in which the environmental science underpinning the extraction limits and environmental provisions was considered and incorporated in developing the water sharing plans, particularly for surface water (NCC, 2003b)
- in the 2003 assessment the National Competition Council was not able to conclude, from the information provided by New South Wales, whether the water sharing plans satisfied the COAG requirement to allocate an appropriate amount of water to the environment, determined wherever possible on the basis of the best available science and accounting for the existing rights of other water users (NCC, 2003a)
- in the 2003 deferred assessment the National Competition Council considered that New South Wales had not met its COAG commitment to provide appropriate allocations of water to the environment in stressed and/or overallocated rivers (NCC, 2004a). The National Competition Council noted that in the 2004 National Competition Policy assessment, the Council would consider recommending a substantial suspension or reduction in competition payments to New South Wales, to apply from 2004-05, unless New South Wales:
  - 'provides evidence to show that its water sharing arrangements go as far as possible to meeting the water regimes necessary to sustain the ecological values of aquatic ecosystems while recognising the existing rights of other users, or
  - commits (as part of the 2004 National Competition Policy assessment) to further developing its arrangements by 1 July 2005 to improve the likelihood that they will achieve the above objective within a reasonable timeframe'

- in the 2004 assessment the National Competition Council stated that New South Wales did not respond to the deferred 2003 National Competition Policy assessment and was still to respond to the Council's invitation (in April 2004) to verify the Council's understanding of the effects of environmental allocation arrangements in the sample of ten water sharing plans considered in the deferred 2003 National Competition Policy assessment (NCC, 2004b). As a consequence the National Competition Council found there was insufficient evidence to enable it to conclude that New South Wales had met its COAG commitment to provide appropriate allocations of water to the environment in stressed and/or overallocated rivers and groundwater systems.

For this 2005 National Competition Policy assessment, New South Wales provided a substantial and detailed supplementary report for the purpose of demonstrating it had addressed its COAG commitments. New South Wales was asked for further information, which was provided in late 2005. The request for further information had been made after the Commission reviewed the information already provided by the state, and following a meeting with Commission staff and Commissioner Cullen and New South Wales government officers in November 2005. An additional request for information was subsequently made by the Commission in early January 2006, to which New South Wales responded at the end of January 2006.

For the 2005 National Competition Policy assessment, the Commission has assessed New South Wales in reference to both: the 2004–05 suspended payments based on the evidence it has provided to meet the requirements for recouping these payments; and New South Wales' ongoing water planning activity and consistency with COAG commitments as set out in the 2005 National Competition Policy Assessment Framework.

#### Natural Resource Management Planning Processes in New South Wales

The *Water Management Act 2000* provides the legal basis for New South Wales' water planning, allocation and entitlement frameworks. It gives effect to the policies regarding the allocation of water resources and the development of water sharing plans to address issues of overallocation. The *Water Management Amendment Bill 2004*, passed on 24 June 2004,

and the *Water Management Amendment Bill 2005*, passed on 1 December 2005, built on the management arrangements provided through the *Water Management Act 2000* to bring it in line with the principles of the National Water Initiative.

#### *Development of Planning Arrangements*

Prior to the commencement of the Natural Heritage Trust and the National Action Plan for Salinity and Water Quality in New South Wales, a series of regional plans were developed by 21 Catchment Management Boards in 2002 to enable integrated catchment management across the state. These plans are called Integrated Catchment Management Plans, or Catchment Blueprints. They outline catchment targets for natural resource management. They also formed the basis of the 2003–2004 Natural Heritage Trust and National Action Plan for Salinity and Water Quality investments within the regions.

Regional Investment Strategies have been developed as mechanisms for allocating the regional Natural Heritage Trust and the National Action Plan for Salinity and Water Quality investments within New South Wales. These strategies are developed for one year or three year periods. The current strategies contain management targets and annual milestones, and identify the budget for each target.

In 2004, new Catchment Management Authorities were formed under the *Catchment Management Authorities Act 2003*. They replaced the existing Catchment Management Boards. The role of the Catchment Management Authorities remains largely the same as the boards, but they are now fully accountable bodies.

Catchment Action Plans are currently being developed by the regional Catchment Management Authorities. The Natural Resources Commission recommended a state-wide standard and statewide resource condition targets to the New South Wales Government, which are being incorporated into each Catchment Action Plan. The plans focus on biodiversity, water and land as the key themes that contribute to healthy functioning landscapes. These new Catchment Action Plans build on the existing Catchment Blueprints and are implemented through an Annual Implementation Plan funded under the Regional Investment Strategies. New South Wales is scheduled to implement all Catchment Action Plans by July 2006.

A State Water Management Outcomes Plan was established in December 2002 to provide for the development, conservation, management and control of New South Wales' water resources. This plan guides the preparation of Water Management Plans and sets the overarching policy context, targets and strategic outcomes for managing water sources over five years.

Water sharing plans are the principle planning instruments under the *Water Management Act 2000* for water resource management in New South Wales. Water sharing plans set rules for sharing water between the environment and other water users. These plans are generally being developed for systems across the state in two phases, with some exceptions for systems with specific management requirements. A first round of individual water sharing plans was developed for mainly heavily stressed systems in New South Wales, including the major regulated systems. It was implemented in July 2004. A second round of generic water sharing plans developed under the 'macro' planning process is expected to begin being implemented from July 2007.

Water sharing plans are designed to provide secure allocations for the various users of water, including the environment, as a basis for robust property rights and water trading. They provide a framework for adaptive management with provisions for five and ten year reviews by the Natural Resources Commission.

#### *Integrated Catchment Management*

The Natural Resources Management Reform was announced by New South Wales in October 2003. It aims to provide a strategy for improved management and protection for native vegetation and other natural resources while minimising restrictions to farming activities. Under this framework, 13 regionally based Catchment Management Authorities, which cover all of New South Wales, were created. These authorities have the responsibility of implementing the natural resource management reforms and report directly to the Minister for Natural Resources.

The Catchment Management Authorities are tasked with preparing Catchment Action Plans that, as described above, provide management objectives for maintaining a healthy functioning landscape. Catchment Action Plans for each Catchment Management Authority area are to be finalised in line with the Natural Resources Commission's standards and targets for natural resource management.

#### *Water Planning Activities*

Following on from New South Wales' 1999 Implementation Programme, on 1 July 2004, 31 (of the 36 gazetted) water sharing plans commenced, covering seven major regulated river systems, 20 unregulated systems and five coastal groundwater systems within the state. These plans cover around 80 per cent of the state's water use.

Implementation of the water sharing plans gazetted for five major inland alluvial groundwater systems has been postponed until July 2006 to enable incorporation of a groundwater structural adjustment program.

From July 2007, New South Wales plans to begin implementing 39 water sharing plans being developed under the 'macro' planning process (described below).

Following this, 17 more individual water sharing plans are to be developed for remaining systems that require specific water sharing rules (as opposed to generic rules under the 'macro' planning process). These plans are expected to be implemented by 2008.

There are three water sharing plan areas identified in the first round of plans that were deferred. Water sharing plans for two of the groundwater systems—the Great Artesian Basin and the Lower Murray alluvial groundwater system—have been drafted and are expected to commence on 1 July 2006. A third plan—for the Orara River system—will now be incorporated into the water sharing plan for the Clarence River system, and is also expected to commence in July 2006.

#### *Implemented Water Sharing Plans*

The initial water sharing plans were prepared by Water Management Committees under the *Water Management Act 2000*. These committees consisted of representatives of the New South Wales Government, stakeholder and community interest groups. The areas covered by the plans were identified as priority systems through the Statewide Stressed Rivers and Aquifer Risk Assessment undertaken by a New South Wales inter-agency working group.

The *Water Management Act 2000* requires all water sharing plans to:

- share water between all users and the environment
- improve the health of rivers and aquifers
- provide security of access for water users

- meet the social and economic needs of regional communities
- facilitate water trading, and
- take into account the State Water Management Outcomes Plan.

A list of systems identified as requiring water resource planning in New South Wales' 1999 implementation programme and in following years is provided below (see Table 2.1). The water sharing plans for these systems were gazetted between December 2002 and February 2003 and implemented in July 2004.

#### *Gazetted Water Sharing Plans for Major Inland Alluvial Groundwater Sources*

New South Wales has indicated that the basis for calculating entitlement reductions in the six identified over-allocated inland alluvial groundwater aquifers in the state has changed.

This will require amendments to the five gazetted groundwater water sharing plans (see Table 2.2), and redrafting of the one groundwater plan that remains to be gazetted. As such, these plans have not been implemented to date, despite being gazetted.

Table 2.1: Water sharing plans gazetted between December 2002 and February 2003 and implemented in July 2004		
Water sharing plans gazetted between December 2002 and February 2003 and implemented in July 2004		
<i>Regulated water sources with implemented water sharing plans</i>		
Gwydir River	Macquarie and Cudgegong Rivers	Namoi River
Hunter River	Murrumbidgee River	NSW Murray – Lower Darling River
Lachlan River		
<i>Unregulated water sources with implemented water sharing plans</i>		
Adelong Creek	Kangaroo Creek	Tenterfield Creek*
Aspley River	Karuah River	Toorumbbee Creek*
Castlereagh River	Ourimbah Creek*	Upper Billabong
Commissioners Waters	Mandagery Creek	Upper Brunswick River
Coopers Creek*	Phillips Creek, Mooki River, Quirindi Creek and Warrah Creek	Wandella Creek*
Dorrigo Plateau**	Rocky Creek, Cobbadah, Upper Horton and Lower Horton	Wybong Creek
Jilliby Jilliby Creek	Tarcutter Creek	
<i>Groundwater sources with implemented water sharing plans</i>		
Alstonville Basalt Plateau	Kulnura Mangrove Mountain	Tomago Tomaree Stockton
Dorrigo Basalt**	Stuarts Point*	

\* These systems were not identified in the New South Wales 1999 implementation programme.

\*\* Dorrigo Plateau Surface Water Source and Dorrigo Basalt Groundwater Source are included in the same water sharing plan.



The deferral of these plans is also to enable implementation of a state and Australian government funded structural adjustment package to accompany the necessary reductions in entitlements in these overallocated systems to bring them to sustainable levels. The changes are being made to better reflect historical use.

The implementation of entitlement reductions is to occur over the ten year term of each plan, starting when the plans commence, which is expected to be in July 2006. Depending on the extent of overallocation, each plan is tailored in its approach to the timing and process for reductions. The New South Wales government maintains its policy that total use of groundwater in a water source or zone will be managed within the sustainable yield; also, for over-allocated systems, the water sharing plan must specify the mechanism for reducing overallocation and extraction to the sustainable yield by the end of the ten year plan period.

The water sharing plan for the Lower Murray is not yet finalised. This is the remaining groundwater source identified as over-allocated. The plan is expected to be gazetted and implemented with the other groundwater plans in July 2006.

'Macro' water sharing plans developed under the 'macro' planning process are to be based on a landscape approach. They will be developed by Expert Regional Panels, comprising New South Wales Government staff and regional Catchment Management Authority representatives.

'Macro' water sharing plans have the same objectives as other water sharing plans. The key differences between the original water sharing plans and those developed through the 'macro' planning process, are that 'macro' water sharing plans cover broader areas, they are produced in a generic way across all systems (not formulated on an individual basis, though they are tailored to the circumstances of the region) and they are based on recommendations of regional inter-agency panels rather than community-based Water Management Committees. The final government approval and gazettal process for water sharing plans remains the same whether they are individual plans or 'macro' water sharing plans.

The 'macro' planning process will apply to most remaining areas through the development of general water sharing plans on a broad catchment area basis. Individual water sharing plans will be prepared in the remaining areas where more specific management is required.

Table 2.2: Groundwater management areas where a water sharing plan has been gazetted, but implementation deferred until July 2006

Groundwater management areas with deferred water sharing plan implementation		
Lower Gwydir	Lower Macquarie (Central West)	Upper and Lower Namoi
Lower Lachlan	Lower Murrumbidgee	

New South Wales states that the 'macro' planning process involves the classification of rivers and aquifers according to their social, economic and ecological values. A standard set of water sharing rules based on

#### 'Macro' Water Sharing Plans

The New South Wales Government is undertaking a 'macro' planning process to deliver water sharing plans to those areas of New South Wales that are not currently operating under a water sharing plan, or will not be subject to a water source specific plan.

Apart from information on the 'macro' planning process provided by New South Wales in its 2005 National Competition Policy assessment report, the Commission received a briefing on the process on 5 October 2005, Commission staff were further briefed on 27 October 2005 and draft guidelines on the development of 'macro' water sharing plans were subsequently provided to the Commission.

these classifications are then used as a starting point for reviewing the existing rules and tailoring the water sharing rules to the individual water sources.

Water sharing plans developed under the 'macro' planning process include, as much as possible, generic water sharing rules that can apply to a number of water sources. The method of developing a plan consists essentially of: (i) a classification of the water source based on a rapid assessment of the impact of extraction rules on irrigation, and (ii) the setting of appropriate rules for that classification, based on the standardised approach.

'Macro' water sharing plans are to be developed in line with the *Water Management Act 2000* and the existing overarching State Water Management Outcomes Plan.

New South Wales has stated that, at the time of this 2005 National Competition Policy assessment, Expert Regional Panels are finalising the classifications and proposed rules for the 27 unregulated river water sharing plans and the 12 groundwater water sharing plans.

The first round of consultation on the proposed rules aims to explain to stakeholder groups the key elements of broad classification and rules development; some consultation occurred in late 2005 and it is expected to continue into 2006. The draft plans will then be modified if necessary and placed on public display in early 2006 as a second stage of consultation. The plans are expected to be gazetted in time to commence in July 2007. The consultation process for groundwater plans is expected to follow that for surface water plans.

#### *Surface Water 'Macro' Water Sharing Plans*

Two matrices are used to define a water source's classification. Firstly, a risk matrix of current extraction indicates how water extraction impacts on important instream values and how much the community is dependent on the extraction. This is used to determine whether water-sharing rules for current extraction should favour either the instream environment or existing extractions, or balance the two.

Secondly, a risk matrix for instream values indicates any objectives for changes in extraction. It is used to identify the effect of licence dealings, such as changing the location of entitlements or introducing a new entitlement, on instream values.

New South Wales considers that water sharing plans developed under the 'macro' planning process aim to balance the needs of both instream ecological values and consumptive uses that require the water. It considers the effects of any changes in extraction rules to achieve the best ecologically sustainable development outcome. They also identify the hydrological stress of the system.

This process is described in classification manuals developed by the Department of Natural Resources for

informing the Expert Regional Panels, which New South Wales expects to be publicly available in the first half of 2006. New South Wales states that this methodology is being independently reviewed and will be completed prior to the finalisation of the plans.

There are 27 surface water systems covering broad catchment areas that are being addressed through the 'macro' planning process. These are listed in Table 2.3. They are all unregulated systems.

**Table 2.3: Unregulated surface water systems to be addressed through the 'macro' planning process**

Unregulated surface water systems to be addressed through the 'macro' planning process		
Bellinger River	Genoa River	Murray River
Border Rivers	Gwydir River	Murrumbidgee River
Brunswick River	Hastings River	Nambucca River
Castlereagh River	Hunter River	Namoi River
Clarence River	Lachlan River	Richmond River
Clyde/Jervis River	Lower Darling River	Snowy River (excluding Snowy River Scheme area)
Coffs Harbour waterways	Lower North Coast Rivers	Towamba River
Deua River	Macleay River	Tuross River
Far West – Warrego, Paroo, Culgoa, Narran, Yanda, Bulloo, Moonie Rivers	Macquarie River	Tweed River

#### *Groundwater 'Macro' Water Sharing Plans*

Water sharing plans for groundwater systems under the 'macro' planning process provide rules for extraction of groundwater for uses other than basic landholder right purposes (such as stock and domestic, which are managed through a licensing system) and identify requirements for groundwater dependent ecosystems.

For the purpose of identifying groundwater characteristics and flow mechanisms for the 'macro' planning process, New South Wales has indicated that it has divided the remaining unmanaged groundwater resources into four different geological provinces:

- porous rock
- fractured rock
- alluvial sediments, and
- coastal sands.

Furthermore, the groundwater sources within each of the geological provinces have been divided into Groundwater Management Areas.

New South Wales has developed a risk evaluation and matrix specific to groundwater for the ‘macro’ planning process for the purpose of assisting the Expert Regional Panels, as outlined in a groundwater classification manual provided by the Department of Natural Resources. This assessment compares:

- the economic benefit of groundwater extraction to business and industry in a community (including social and economic considerations), with
- the requirements for protecting the ecological assets, integrity and water quality of the aquifer (environmental considerations).

The matrix is used to develop a ‘sustainability ratio’ to inform management rules that will be included in water sharing plans. The ratio will also inform any potential need for altering levels of extraction.

The ‘macro’ planning process will apply on a broad groundwater system basis to areas without a water sharing plan currently in effect, apart from those remaining areas where an individual water sharing plan is required. See Table 2.4 for the 12 groundwater systems being addressed through the ‘macro’ planning process.

*Remaining Systems*

For areas remaining after the roll out of water sharing plans in 2004 that require management arrangements more specific to that provided through the ‘macro’ planning process, individual water sharing plans will be prepared. These plans will be developed in the same manner as the first round of water sharing plans. They are currently scheduled for finalisation between July 2006 and July 2008.

See Table 2.5 for the 17 remaining systems being addressed through individual water sharing plans.

Table 2.5: Systems to be addressed through individual water sharing plans		
Systems to be addressed through individual water sharing plans		
<i>Complex unregulated river areas or systems</i>		
Barwon-Darling River	Lowbidgee Flood Control District	Sydney Metropolitan area (including Hawkesbury/ Nepean River, Shoalhaven River, Illawarra area and Coxs River)
Hunter estuaries		
Remaining regulated river systems		
Bega River	Fish River	Peel River
Belubla River	Googong River	Toonumbar River
Border Rivers	Paterson River	
<i>Unregulated rivers subject to interstate agreements</i>		
Snowy River Scheme	Upper Murray River	
Groundwater systems		
Border Rivers Aquifer	Great Artesian Basin	Peel Aquifer

Table 2.4: Groundwater systems to be addressed through the ‘macro’ planning process.		
Groundwater systems to be addressed through the ‘macro’ planning process		
All Porous Rock Basins – covering Sydney-Oxley-Gunnedah, Clarence and Western Murray Basins.	Darling Basin Alluvium	North Coast Alluvium
Broken Hill Block Fractured Rock	Lachlan Fold Belt Fractured Rock	North Zone Coastal Sands
Central Coast Alluvium	Murray Basin Alluvium (shallow aquifers)	South Coast Alluvium
Central Zone Coastal Sands	New England Block Fractured Rock	South Zone Coastal Sands

New South Wales has stated that the Barwon-Darling River is the only unregulated surface water system where entitlements will be reduced. Entitlements in the Barwon-Darling River will be redefined to specify the long term average use limit available to each licence, stated as a share in the total volume of water available for use from the Barwon-Darling River. New South Wales states that this is, on average, a reduction in entitlement of about ten per cent. New South Wales also claims that this reduction is in line with the Murray-Darling Basin Cap on extractions for this system. To offset the socioeconomic impacts in the first year of plan implementation, consumptive users may be provided with an additional volume. This will be credited to active water users' accounts to assist in the early years of transition.

The other unregulated river systems will be managed to Murray-Darling Basin Cap (inland rivers), or water sharing plan extraction limits (coastal rivers), using existing entitlements that specify the annual and daily limits on extractions. If growth in use is detected, available water determinations will be used to keep extraction within the extraction limit. Under amendments to the *Water Act 2000*, entitlements in New South Wales are to be specified under a water sharing plan as a share of the water available for extraction from that water source. Available water determinations specify the number of megalitres available per unit share.

#### Detailed Planning Processes

##### *Provisions for the Environment*

The major insight into the method used to determine the environmental water requirement in water sharing plans comes from information provided directly by the New South Wales Government for the purpose of this 2005 National Competition Policy assessment. This information related chiefly to water sharing plans which have already commenced.

The environmental water requirements in commenced water sharing plans were determined by use of two main information sources:

- existing hydrologic modelling from the Integrated Quantity and Quality Model—a daily flow model that simulates both natural and scenario flows; it is used to

estimate changes in flows at different points in a river system as a result of different allocation scenarios, and

- technical and professional experts, including agency staff, who were invited to provide independent advice through literature reviews, scoping papers, presentations, and workshops. Key expert scientists also provided advice to the Water Management Committees. New South Wales states that for the majority of the regulated systems, independent scientists were also committee members and were responsible for ensuring that independent scientific information and advice was used during committee determinations. In addition, a number of socioeconomic studies were undertaken across New South Wales, particularly in relation to economic modelling of impacts of water sharing options on irrigators.

The water sharing plans that have been implemented so far used flow analyses that were based on existing information. New South Wales has indicated that new research was not undertaken because of time constraints. The Commission notes, however, that new work was undertaken to assess the socioeconomic impact of different allocations in the development of these plans.

New South Wales provided the Commission with a comprehensive list of references to reports and assessments used as a basis for determination of the environmental water requirements for systems with implemented water sharing plans. Those references compiled by the New South Wales Environment Protection Agency, as part of the setting of River Flow Objectives across the state, cover a very wide range of topics and include much material unrelated to environmental flows. However, the Background Reference Paper provided by New South Wales for this assessment is a valuable summary of these references, albeit not specific to any particular river system.

The information provided indicates that no single or specific methodology was used in developing environmental water allocations. Rather, it appears that existing environmental flow objectives from 1998 were modified in light of expert opinion and verbal presentations. There is little formal or publicly available record of the decision process. Nevertheless, New South Wales has provided information on this process based on collected records and further work

undertaken for the purpose of the 2005 National Competition Policy assessment. This information indicates significant negotiation in Water Management Committees over possible allocation scenarios.

New South Wales has also stated that the Water Management Committees were of the view that their role in the water sharing planning process was to establish through legislation a legal share of water for the environment, and that the actual volume of allocation provided for the environment could be increased in the future.

New South Wales states that the greatest dearth of information lay in the linkage between flows and ecology. This is generally true throughout Australia, and indeed globally. In the case of the Gwydir and Namoi Rivers, for which New South Wales has provided the Commission substantial information, this gap was addressed in part through reviews of the local literature and local experience, summarised in Environmental Scans. These are high quality review documents that have been compiled by recognised scientific experts.

It appears that Environmental Scans were not carried out for any other systems. However, a very basic level of scientific information was provided through the State of the Rivers and Estuaries Reports compiled for New South Wales systems.

New South Wales has not provided information on the recommendations presented by the scientists for any system, although it states that environmental scientists recommended an increase in the amount of water provided to the environment in all planning areas (in contrast, irrigator representatives called for more water for extractive purposes). New South Wales advises that these recommendations were contained in the briefings and other verbal interchanges with scientists. The deliberations of the committees were recorded in minutes of meetings, which have been archived but records of which are not available publicly.

Reduction of the long term annual average volume of extractions within a plan area was arbitrarily limited to ten per cent as a result of the environmental rules imposed by the regulated river water sharing plans. New South Wales has argued that this allowed for consideration of socioeconomic and regional development impacts. New South Wales states that the water sharing rules in each plan

will be reviewed during and at the conclusion of a plan. New South Wales has further indicated that these reviews will not be limited to a specific amount of potential change in extractions.

New South Wales states that entitlements are managed under a water sharing plan to limit total use to the specified extraction limit for each plan area. Each entitlement has an equal property right and licence holders wishing to obtain more access to water, above their current entitlement, may increase their usage through trading.

Water sharing plans include some indicators against which the performance of a plan can be monitored. Plans are to be reviewed every five years by the Natural Resources Commission.

#### *Groundwater*

In relation to planned environmental water for groundwater sources, the proportion of recharge to be protected from extraction for environmental purposes is determined on an individual system basis and will vary between water sources depending on the environmental water requirement. Groundwater plans aim to provide water for the environment through protection of the long term storage component of the aquifer plus a proportion of the average annual recharge, with the remaining water to be made available for extraction.

As noted above, the implementation of gazetted water sharing plans for the five inland alluvial groundwater systems identified as overallocated has been deferred in order to enable a comprehensive revision of the method for reducing entitlements to sustainable yield, to account for historical extraction, and to develop a complementary structural adjustment program.

The water sharing plans have been developed to achieve sustainable levels of groundwater extraction by the end of the plan duration. As such, entitlement reductions are to be phased in over ten years for this purpose.

Stakeholders raised concerns over the proposed 'across the board' method used in initial development of the plans. They considered that while it achieved significant environmental outcomes, it did not adequately address social and economical impacts, and that historical extraction should be included as a consideration in groundwater entitlement reductions.

The water sharing plans are therefore being amended to give consideration to history of use. For some systems this will require verification as there are only short term usage records available (eg: two to three years in the Lower Lachlan and Lower Macquarie systems). Historical extraction will be used to determine users' rights to access groundwater.

At the same time, the New South Wales Government proposed a project to provide a methodology, to be developed in conjunction with stakeholders, for reducing individual entitlements and to assist in managing the impact of the reductions on licence holders.

As a result, agreement has been reached between the New South Wales and Commonwealth Governments to provide funding for developing and implementing a groundwater entitlement reduction methodology, and to provide structural adjustment assistance to mitigate the effects of reduced groundwater entitlements on licence holders.

#### *Entitlements*

As discussed earlier in this chapter, the *Water Management Act 2000* specifies two types of environmental water:

- planned environmental water is provided by water sharing plans through environmental rules and extraction limits for fundamental ecosystem purposes, and, except for environmental contingency allowances, cannot be used for any other purpose, and
- adaptive environmental water is provided by the conditions on Water Access Licences for specified environmental purposes. If the water is not required for the specified environmental purpose, the annual allocation may be temporarily traded subject to an approved management plan for the licence.

Allocations for the environment are currently provided in those systems with an implemented water sharing plan. Other systems are yet to have the environmental entitlements specified. The gazetted groundwater plans have specific environmental provisions, but are yet to be implemented.

#### *Trade-offs*

From information provided by New South Wales, the trade-offs between environmental and consumptive water needs in implemented water sharing plans were determined for each

system by the Water Management Committees, representing the interests of environment, production and community. The Minister also has a role in establishing trade-offs in his capacity as providing final approval of water sharing plans.

From the information available on the Department of Natural Resources' website, and the documentation used by the Commission to assess the Lachlan and Hunter River Water Sharing Plans (see below) (DIPNR, 2004a and 2004b), there does not appear to be a formal method for deciding on environmental water allocations compared with other water allocations that is fully transparent.

New South Wales has stated that the decisions reached represented a compromise between different view points of environmental and consumptive user representatives, resulting in a consensus within each Water Management Committee.

New South Wales states that draft water sharing plans were made available before plan finalisation and that these drafts discussed the basis for the development of the rules in the plans. New South Wales also states that the issues discussed by the Water Management Committees were emotive, complex and difficult to resolve. Records of these meetings were kept confidential to encourage frank and honest deliberations, protecting the contributors.

#### *Example Water Sharing Plans*

The Lachlan and the Hunter Valley systems were looked at in detail by the Commission for this 2005 National Competition Policy assessment. These two systems were selected as examples of finalised water sharing plans. They were used by the Commission to assess New South Wales' approach to incorporating the 1994 COAG Water Reform Framework and the ARMCANZ/ ANZECC National Principles for the Provision of Water for Ecosystems into its management arrangements.

The Lachlan Water Sharing Plan (DIPNR, 2005c) was also selected to coincide with the substantial information provided by New South Wales for the 2005 National Competition Policy assessment on the development of the plan. In addition, New South Wales provided the Commission with a case study of the Gwydir system, along with summaries of eight surface water and groundwater plans. General information on environmental water planning issues and steps taken to address water reform commitments was also provided.

*Water Sharing Plan for the Lachlan Regulated River Water Source*

The water sharing plan for the Lachlan River was part of the first round of plans that were implemented in July 2004.

Most of the information used to assess the Lachlan Water Sharing Plan was provided to the Commission by New South Wales for the purpose of this 2005 National Competition Policy assessment.

The release of water for environmental purposes in the Lachlan River dates back to 1989 when water was released for a bird-breeding event. In 1992 formal limits were placed on the extraction of supplementary water (opportunistic water available to users above their allocation) to ensure that there was enough water for environmental purposes. Various adjustments were made to those allocations and the rules governing them over the ensuing years. The Murray-Darling Basin Cap on extractions was agreed in 1995 and commenced in 1997. Interim environmental flow rules were introduced in 1998/99.

Against this background, New South Wales has emphasised that the production of a water sharing plan must be seen as another step in a continuing process of identifying and ensuring water for environmental purposes. As such, the Lachlan Water Sharing Plan is built on the earlier water sharing rules rather than being a wholly new effort.

In relation to the list of references supplied by New South Wales, as used in the development of the Lachlan Water Sharing Plan, there is a notable absence of any scientific studies to establish flow requirements for different ecological components. Furthermore, only a small number of the references supplied relate directly to the Lachlan River. The Lachlan Water Advisory Committee was presented with a copy of the *Lachlan State of the Rivers Report*, which used a series of indicators to provide an overall picture of the condition of rivers over time and to identify trends in resource condition (DLWC, 1998). A large number of documents referenced focus on social and economic investigations into impacts of environmental flows and water sharing on the agricultural sector. None investigate the effects of water allocations on the environment.

It appears that no Environmental Scan, such as those undertaken for the Gwydir and Namoi systems, was

compiled for the Lachlan system. However, the *Lachlan State of the Rivers Report* was used to provide information on changes in hydrology and impacts on the aquatic environment due to infrastructure and extractions, as well as anthropogenic influences on wetlands, floodplains and riparian vegetation. The report also provided a small amount of information on flow related effects on these ecosystems.

The information provided by New South Wales indicates that environmental scientific information was largely drawn from presentations made to the Water Management Committee on environmental and hydrological issues. Details are in meeting minutes that are not publicly available.

New South Wales states that the draft Lachlan Water Sharing Plan outlined the background to, and the basis for, the environmental flow rules recommended by the committee. The draft plan was said to be available from the New South Wales Government between its release and the finalisation of the water sharing plan. The Commission has not viewed the draft plan.

As noted above in relation to 'Provisions for the Environment', the Integrated Quantity and Quality Model was used for hydrological modelling and New South Wales Government representatives made presentations to the Water Management Committee on these model runs. This model has been further enhanced over the years and is now considered to be of very high quality.

New South Wales states that the Water Management Committee drew on a 2001 expert panel workshop, which analysed existing environmental releases, to see if they had met their targets. However, this workshop's proceedings are not publicly available.

The trade-offs between environmental and consumptive uses in the Lachlan system were negotiated by the Water Management Committee during the development of the water sharing plan. From information provided by New South Wales, it is clear that this was a difficult and protracted negotiation.

New South Wales considers that the environment benefited from irrigators' access to water being reduced to 75 per cent of their licensed entitlement, and no more extractions of supplementary water. Furthermore, it considers that irrigators benefited from an increase in security of access

through restricting translucent flows (additional dam releases for environmental purposes) to wetter periods when the major system dam, Wyangala Dam, was fullest.

#### *Water Sharing Plan for the Hunter Regulated River Water Source*

The only information on the Hunter Water Sharing Plan (DIPNR, 2004d) and its development process that is publicly available is the Water Sharing Plan itself.

New South Wales states that information specific to the Hunter River was present on the Department of Natural Resource website during finalisation of the water sharing plan. This included the *Hunter State of the Rivers and Estuaries Report* (and associated fact sheet) (DLWC, 2000), the draft water sharing plan and dissenting reports.

As well as providing management arrangements for surface water, the Hunter Water Sharing Plan includes a groundwater component. The plan describes the outcomes in terms of objectives, sharing rules to achieve the objectives, and monitoring and reporting requirements.

The gazetted water sharing plan does not describe the science used to develop the plan. Furthermore, this information is not available in any other public reports.

The information provided by New South Wales for the purpose of this 2005 National Competition Policy assessment implies that the Hunter Water Sharing Plan was developed using the same methodology of building on existing environmental flow rules—as was used in the Lachlan River Water Sharing Plan. As with the Lachlan River, the trade-offs between the environment and consumptive water uses in this catchment are not transparent, appearing to have been decided through committee discussions with little or no publicly available record.

#### Public Consultation and Education

New South Wales notes that it consulted extensively during the development of the implemented water sharing plans. This consultation process is anticipated to continue through the development of the remaining plans and ‘macro’ planning process.

The initial 31 water sharing plans were developed through local Water Management Committees, which included representatives from the local community and various

stakeholder groups with interests in the plans. New South Wales has stated that a series of public meetings have been held across the state over the last five years to explain the water sharing plans and the new licensing arrangements provided through them. Specific public consultation on the water sharing plans occurred over the two years of plan development and gazettal.

In the development of the remaining water sharing plans that will cover the rest of New South Wales’ water use under the ‘macro’ planning process, Regional Panels have been established to make initial recommendations on the classification for each plan area and the proposed water sharing rules for each plan area. Local Catchment Management Authorities, which are represented on the regional panels, have been tasked to facilitate public consultation on the panel’s recommendations from late November 2005 to early 2006. In addition, New South Wales states that a number of briefings have been held with peak stakeholder groups.

The Catchment Management Authorities are also expected to undertake public consultation on the draft water sharing plans during the public exhibition period currently scheduled for mid 2006. Public submissions will be considered by the Regional Panels in the development of final plans.

On the Department of Natural Resources’ website there is a range of information sheets, maps and public registers to assist the public in understanding the new arrangements.

#### Submissions

All submissions received in relation to New South Wales’ planning processes were critical of its water sharing plan processes, including the new ‘macro’ planning process and the process which developed the commenced water sharing plans. All submissions highlighted the lack of transparency as a major concern. New South Wales has provided a detailed response to the issues raised in submissions and this is reflected in the discussion and assessment.

The New South Wales Irrigators’ Council raised a number of concerns:

- the lack of involvement of stakeholders in the ‘macro’ planning process, and the speed with which the process is being conducted



- a lack of transparency around the development of water sharing plans developed under the ‘macro’ planning process, and
- the inadequacy of socioeconomic analysis undertaken for finalised water sharing plans and for development of remaining plans.

The Combined Environmental NGOs raised concerns about the following:

- a lack of clarity about what information was used to inform decisions about prioritising water planning activities and addressing overallocation
- a view that rules within water sharing plans do little to reduce consumptive entitlements to address overallocation, and that the State Water Management Outcomes Plan does not specify a requirement to return overallocated systems to sustainable levels of extraction
- that the five gazetted inland alluvial groundwater water sharing plans have yet to be implemented, despite the grave overallocation in most of the systems, and
- that water sharing arrangements that provide flows for the environment through existing water sharing plans are not based on the best available science.

Namoi Water raised its concern over the lack of information provided to the public on the water sharing plan process and unresolved issues of proposed plans, particularly in relation to the Peel Valley. Namoi Water considers the ‘macro’ planning process does not sufficiently deal with the complexity of a system such as the Peel. Furthermore, it considers that no public process has been undertaken to detail how catchment issues will be resolved or whether the Peel system is part of the ‘macro’ planning process or an individual water sharing plan process.

## Discussion and Assessment

### 2004-05 Suspended Payment

The 2004 National Competition Policy assessment found that New South Wales had not demonstrated that it had satisfactorily addressed its COAG commitment and, as a result, recommended a ten per cent suspension of the state’s 2004-05 competition payment.

The Commission considers that New South Wales has made a considerable effort to provide information on its water planning processes for the purpose of this 2005 National Competition Policy assessment, in particular in response to suspended payments from the 2004 National Competition Policy assessment.

The Commission is satisfied that New South Wales has demonstrated its use of best available science in the development of environmental water allocations in the Gwydir system. Notwithstanding that this plan was developed in 2003, the process to develop the plan could not be said to be completely transparent given the amount of effort required to unearth information.

However, New South Wales was unable to demonstrate that information of similar quality on environmental allocations was used to inform the development of other systems’ water sharing plans.

The Commission therefore considers that New South Wales has not demonstrated that the assessment and evaluation processes undertaken for the Gwydir system are representative of the processes undertaken for all other water sharing plan areas in the state. Furthermore, New South Wales has not demonstrated that the science used to inform the development of rules for water sharing plans was comparable in quality across systems.

Due to these continuing questions about the scientific information and processes used to develop water sharing plans, it is difficult in many systems to conclude that the environmental allocations are within a range of outcomes that could reasonably be reached on consideration of the best available science and robust socioeconomic evidence.

The information provided for the 2005 National Competition Policy assessment has given the Commission more confidence than that which emerged from previous National

Competition Policy assessments that the science used to inform some Catchment Management Committees was likely to represent best available science.

The Commission is also of the view that New South Wales has not demonstrated transparent processes for determining environmental and consumptive water allocations. The Commission accepts that the water sharing plans did draw on hydrologic modelling that existed at the time and expert technical advice, provided chiefly by New South Wales government officers in presentations to Water Management Committees. The scope to test the advice provided, and the openness of the process for reaching trade-offs between environmental and consumptive water allocations was not adequate in the Commission's view. In this respect, the Commission is also concerned that the planning and decision-making processes, and therefore the outcomes from these processes, varied considerably across the state.

#### Example Water Sharing Plans

In reviewing New South Wales' current and past approach to water resource planning, the water sharing plans for the Lachlan River and for the Hunter River were reviewed by the Commission as examples of planning activity across the state.

##### *Water Sharing Plan for the Lachlan Regulated River Water Source*

New South Wales provided the Commission with information relating to the Lachlan system for the purpose of this 2005 National Competition Policy assessment in its supplementary report and following requests for further information.

The Department of Natural Resources, through expert scientists, provided technical information to the Water Management Committee, which was responsible for determining the water sharing rules and flow provisions for the environment. The Commission notes that much of this information was generic and not specific to the Lachlan system. It appears that no Environmental Scan was compiled for the Lachlan system.

Overall, the level of scientific background provided to the Lachlan Water Management Committee was of lower quality than that provided to the Gwydir and Namoi committees through the Environmental Scans. The Commission considers that a basic level of scientific information was

provided to the Committee, although it did not appear to be well tailored to issues of water allocation and environmental flows.

Calculations of flow objectives seem to be qualitative based largely on informed discussions between experts and the seeking of a compromise between representatives of different water resource interests.

Substantial socioeconomic assessment was undertaken through multiple studies across the state for informing Water Management Committees on impacts of water sharing on the local water consumers. The Commission considers that New South Wales demonstrated considerable effort to address the potential socioeconomic impacts on the community and consumptive water users in the development of water sharing plans.

While these studies provide extensive information on economic and also social considerations, the Commission is concerned that equivalent focus was not given to environmental considerations, and that existing flow regimes were considered as an adequate source of information. New South Wales states that hydrologic modelling was used in the determinations, employing the Integrated Quantity and Quality Model. However, the extent to which this information was included is unclear considering the provisions in finalised water sharing plans do not demonstrate specific flow requirements.

Overall, the Commission is concerned that information from reports and studies used to inform the Water Management Committee discussions was often too generic and did not always provide sufficient detail specific to individual catchments for the determination of flow requirements adequate to maintain ecosystem health. Furthermore, there is little information in the plans themselves on how the various rules and limits in the plans are to achieve environmental outcomes.

*Water Sharing Plan for the Hunter Regulated River Water Source*

The Commission also endeavoured to review the water sharing plan for the Hunter River. However, due to a lack of publicly available information, an assessment on this plan was not able to be undertaken. Although it is possible that sufficient information may have been available during the development stage, any such information appears to be no longer retrievable and is not now available. This further underscores the Commission's concern over a lack of transparency in relation to water planning processes across New South Wales.

*Recuperation of Suspended Payment*

Overall, despite the progress made by New South Wales and the substantial information provided to the Commission specifically for this 2005 National Competition Policy assessment, the Commission considers that New South Wales has not provided robust information to support its current environmental allocation arrangements for all systems within the state. The Commission remains concerned that New South Wales does not have a coherent or transparent methodology for assessing environmental water needs.

Furthermore, the Commission is of the view that New South Wales has not demonstrated that its environmental allocations are within a range of outcomes that could reasonably be reached on consideration of the best available science and robust socioeconomic evidence. The lack of a coherent methodology for assessing environmental water needs makes it difficult to judge whether the outcomes are reasonable or not, and there remain questions about whether best available science was used in planning for all systems where water sharing plans have commenced.

The Commission does recognise that New South Wales did provide for a more rigorous approach to establishing environmental water needs in some systems, and planning for the Gwydir system provides some evidence of this. Further, the Commission considers that in contrast to previous National Competition Policy assessments, New South Wales has made considerable effort to compile and provide information on its implemented water sharing plans for the purpose of this 2005 National Competition Policy assessment and addressing the 2004-05 competition

payment suspension. New South Wales' report contained general information on steps taken to address environmental water and other reform commitments through its water sharing plans, detailed case studies for the Gwydir and Lachlan systems, and summaries of eight other surface water and groundwater plans. The Commission has also subsequently made two requests for information to New South Wales, and information provided on Environmental Scans undertaken for the Gwydir and Namoi systems provided some greater confidence about the ecological science on environmental water needs feeding into those water sharing plans.

In its defence of its water planning effort, New South Wales points out that it undertook a considerable task in attempting to compile water sharing plans in a very tight time frame, especially considering the significant overallocation in some systems. New South Wales has implemented 31 (of 39) water sharing plans identified in its 1999 Implementation Programme, covering around 80 per cent of total water use in the state. At the time of development, there were strongly opposing views on the approach to rectify overallocated systems, particularly the extent to which adjustments could be made.

The Commission acknowledges that New South Wales' initial planning was a challenging exercise under the circumstances. Nevertheless, some of those circumstances were of New South Wales' own making (including planning timetables and a lack of base scientific understanding of some systems). In addition, the Commission considers that the significant overallocation in some systems made the need to achieve sustainable extraction levels through these plans more pressing. New South Wales by its own admission has not achieved sustainable extraction levels through the first round of water sharing plans.

## Natural Resource Management Planning Processes in New South Wales

New South Wales considers that the ARMCANZ/ ANZECC National Principles for the Provision of Water for Ecosystems and the 1994 COAG Water Reform Framework requirements have been integrated into its water reforms.

The *Water Management Act 2000*, including provisions in the Water Management Amendment Bill 2004 and Water Management Amendment Bill 2005 and water sharing plans provide for the recognition of river regulation and consumptive use as potentially impacting on ecological values. Water sharing plans have been developed, which go some way to dealing with overallocation and overuse in some systems.

The plans do recognise the existing rights of other water users. It seems that further allocation of water for any use, in systems that are not currently overallocated, is on the basis that natural ecological processes and ecological values are sustained.

Accountabilities in all aspects of management of environmental water are, for the most part, fully transparent and clearly defined.

New South Wales has monitoring regimes to inform assessments of the adequacy of environmental water and improvements in understanding of environmental water requirements.

New South Wales has demonstrated high levels of integrated catchment management of water resources across catchments. Catchment Management Authorities, and the previous Catchment Management Boards, provide management processes and administrative arrangements for natural resources that integrate their management across a landscape.

The arrangements for water management in New South Wales have legislative backing and are comprehensive.

Nevertheless, the Commission retains some concerns about whether implementation of the frameworks in practice is meeting all of the ARMCANZ/ ANZECC National Principles for the Provision of Water for Ecosystems. Some of these concerns have been identified in relation to the suspended competition payment matter. The following discussion on current water planning activities also highlights some areas of concern to the Commission.

## Water Planning Activities

### *Implemented Water Sharing Plans*

New South Wales has gazetted 36 (of 39) first round water sharing plans that allocate water for the environment in the state's major river and groundwater systems. 31 of the 36 gazetted plans have been implemented. No new water sharing plans have been gazetted since the 2004 National Competition Policy assessment. As such, the issue of whether New South Wales has provided sufficient evidence to demonstrate a transparent process of allocating appropriately for the environment in the 36 gazetted plans is dealt with above in '2004-05 Suspended Payment'.

### *Water Sharing Plans for Major Inland Alluvial Groundwater Sources*

Implementation of the five gazetted and the one additional water sharing plans for the six overallocated inland alluvial groundwater aquifers has been deferred in order to incorporate a structural adjustment package, funded by state and federal governments. This package is for the impacts of reductions in entitlements required to achieve sustainable levels of extraction in these systems.

The report provided by New South Wales for this 2005 National Competition Policy assessment provides little additional content on the process for preparing water sharing plans for the six inland alluvial groundwater districts which are due to be gazetted in mid 2006, and which are the subject of the adjustment package.

The Commission notes that the gazetted inland alluvial groundwater plans were originally developed through the same processes as the other finalised water sharing plans for surface water systems. That is, that the amount of planned environmental water for groundwater sources was determined based on any existing scientific information and advice from experts, taking into consideration existing consumptive use.

The adjustment package and the planned reductions in extractions which underpin it were assessed in the context of the Commission's consideration of funding for the adjustment assistance project proposed by New South Wales. As part of this project assessment, the Commission sought advice from the Australian Government Bureau of Rural Sciences on the recharge and sustainable yield numbers which underpin the water sharing plan allocations. While noting that there are some inherent risks in any

calculation of sustainable yield for groundwater (due to the lack of knowledge), the Bureau concluded that, based on the information provided, the numbers were sound and that the methodology used was standard throughout Australia.

*Water Sharing Plans Developed Under the 'Macro' Planning Process*

The 'macro' planning process has not been included in any previous National Competition Policy assessments due to the fact that the process was still being developed.

The 'macro' planning process is expected to deliver many water sharing plans for systems across New South Wales in a relatively short timeframe. Expert Regional Panels have been formed to develop the rules for each water sharing plan.

Generic water sharing rules will be developed to apply across a number of systems. Risk matrices for current extractions and for instream values have been developed for each system to determine how the water requirements for both are to be balanced in each system. The matrices developed for the 'macro' planning process appear to provide a good framework for assessing the risk to environmental and socioeconomic values relevant to each system.

New South Wales has continued to refine its methodology for 'macro' planning during the second half of 2005. The Commission has gained a better understanding of the methodology and has no fundamental problem with the approach as a means to streamline planning and development of flow rules for systems, especially systems which are facing lesser development pressures or other risks.

Nevertheless, as with the first round of water sharing plans, the methodology in practice will only be as good as the science which underpins it, and the planning outcomes only as credible as the transparency with which the plans are being developed.

New South Wales has not demonstrated a robust process for the development of flow regimes under these plans and it is assumed that these decisions will be made through negotiations by the Expert Regional Panel, in the same manner as the first round of water sharing plans.

The Commission is of the view that the processes which will be used for determining the provisions in plans is not transparent, as with the first round of water sharing plans. In addition, the Commission considers that there remains a lack of information publicly available on the 'macro' planning approach and the science underpinning it. This is critical to help community understanding of New South Wales' water planning processes and resulting plans and management rules. It is also critical to engender public confidence in the planning outcomes, in contrast to the level of confidence generally associated with the first round water sharing plans.

*Remaining Systems*

New South Wales has advised that it is progressing the three water sharing plans remaining from its 1999 Implementation Programme and expects them to be implemented between July 2006 and July 2008. As with plans under the 'macro' planning process, the Commission will continue to track New South Wales' progress to ensure that the science underpinning these plans is robust, and that their development is transparent.

*Public Consultation and Education*

During the development of water sharing plans, New South Wales conducts consultative meetings with community and stakeholder representatives on issues of water resource planning and specific to individual catchments.

New South Wales has demonstrated that it undertook considerable consultation in the development of the first round of water sharing plans.

However, in light of both the information provided to the Commission for the purpose of this 2005 National Competition Policy assessment, and the concerns raised in the submissions received, the Commission considers that there remain serious problems with New South Wales' approach to public consultation in relation to: the timeliness of information provided to stakeholders; the type and quality of information provided to stakeholders; and the transparency of the process in which stakeholders are invited to participate.

The Commission has noted these concerns in the above Section on the 2004-05 Suspended Payment.

## Summary

The information provided by New South Wales in three lodgements with the Commission has provided greater confidence that it did draw on best available science in some systems, relied heavily on hydrologic modelling using good quality models, and undertook new socioeconomic studies to inform planning decisions.

Therefore, the Commission recommends returning \$13million of the \$26million 2004-05 suspended competition payment, on the basis of the further evidence provided in response to the 2005 National Competition Policy assessment.

Nevertheless, the information provided by New South Wales and the Commission's review of planning processes has reinforced concerns that:

- the ecological science used was inadequate to inform decision making in some water systems for which plans were being prepared
- allied with the point above, New South Wales did not appear to have a coherent methodology for assessing environmental water needs and developing environmental water allocations (rather, existing environmental flow objectives from 1998 were modified in light of expert opinion and verbal presentations), and
- planning has lacked transparency in terms of the amount and type of publicly available information, the formal documentation of planning considerations, and the way in which trade-offs were reached between consumptive and environmental water in plans.

Therefore, the Commission considers that the information provided does not comprehensively:

- support New South Wales' current environmental allocation arrangements for all systems within the state, nor
- demonstrate that New South Wales' environmental allocations are within a range of outcomes that could reasonably be reached on consideration of the best available science and robust socio-economic evidence.

With regard to New South Wales' water reform progress in 2005, the Commission also has some concerns that New South Wales will continue to use planning processes which

lack transparency in both the science being used and the trade-offs to be made. Such concerns about the 'macro' planning process have also been expressed in National Competition Policy submissions.

On the basis of the Commission's conclusion that New South Wales has not fully addressed the suspended payment matter, and that there remain concerns about New South Wales' ongoing water planning activities, the Commission recommends a continuing suspension of \$13 million of New South Wales' 2004-05 competition payments.

The Commission further recommends that this suspended penalty be able to be recouped by New South Wales if it can demonstrate to the Commission's satisfaction that it:

- has improved the ecological science used in developing water sharing plans for all remaining systems through both the 'macro' and individual planning processes
- has improved the transparency of the ecological science and the water planning processes for 'macro' water sharing plans and remaining individual water sharing plans, for example through peer review of science used, through more effective engagement with stakeholders, and through greater transparency around the trade-offs made between consumptive and environmental water allocations in water planning, and
- is monitoring outcomes of water sharing rules and environmental allocations in water systems where water sharing plans already exist.

## 2.2.4 Assigning Risks for Changes in Allocation

### Assessment Issues

The Commission expects New South Wales to demonstrate that it has a process and timetable in place to integrate the risk assignment framework into its legislative and administrative water entitlement and planning regimes, and to have applied the framework for any changes in allocations that have not been provided for in its current water plan overallocation pathways.

**At the time of this assessment, water sharing plans have commenced and been implemented in six major regulated systems, 20 unregulated systems and five coastal groundwater systems.**

**The National Water Initiative requires that states and territories clearly assign the risks of changes to water entitlements that arise from future changes to the amount of water available for consumption.**

**Recent legislative amendments mean the National Water Initiative framework for assigning risk to changes in allocation will come into force from 2014. Until then, the compensation provisions in the *Water Management Act 2000* for changes to water sharing plans prevail.**

**The *Water Management Act 2000* sets out the way risk is assigned for the ten year duration of the first water sharing plan for each water source in New South Wales.**

**The Act enables water access licence holders to claim compensation if their water allocations are reduced due to conditions that are not provided for under the water sharing plan for that system (this is regardless of whether the change is policy or knowledge driven). This guarantees the structure under which access will be provided for the first ten years of the water sharing plans.**

**The compensation provisions of the *Water Management Act 2000* can apply only to water access licence holders in areas where water sharing plans have commenced. All other licence holders are still subject to the Water Act 1912, which does not have risk assignment provisions.**

**New South Wales considers that amendments to the *Water Management Act 2000*, made on 1 July 2004, meet the preconditions for an effective risk framework as**

**specified in Clause 47 of the National Water Initiative. These amendments have introduced:**

- a new share-based water access entitlements framework
- water sharing plans that are developed through a transparent process that determines water allocation for the entitlements
- compensation for changes to water access licence holders' access to water that is not specifically provided for in water sharing plans;
- regular reporting of progress with implementing the water sharing plans, and
- established pathways through the water sharing plans, for dealing with known overallocation and overuse.

**New South Wales has legislated to apply a revised risk assignment approach from 2014 onwards, in line with the National Water Initiative. The main effect of implementing this new framework will be that the costs of changes in access resulting from improvements in knowledge or science will be shared between licence holders, the New South Wales government and the Australian government. Further, the impacts of a change in natural conditions are to be borne by the licence holder and impacts of a change in government policy are to be borne by the government.**

**New South Wales' legislative amendments in late 2005 for its new risk assignment framework include, for changes in water allocation:**

- the first three per cent of the cost of the change would be borne by licence holders
- a reduction in allocations of between three per cent and six per cent would be compensated by both the New South Wales and Australian governments (one-third paid by the state and two-thirds by the Australian government)
- reductions of more than six per cent would be equally shared by the New South Wales and Australian governments, and
- all first-round water sharing plan areas will come under the National Water Initiative risk assignment framework in 2014. This framework will commence in all other plan areas once the plans ten year duration concludes.

## Discussion and Assessment

New South Wales has demonstrated it has a process and timetable in place to integrate the National Water Initiative risk assignment framework into its legislative and administrative water entitlement and planning regimes.

The Commission notes that uncertainty surrounds the assignment of risks to changes in allocations in areas that are not covered by a current water sharing plan. The Commission further notes that this is a function of the rollout of the water sharing plans in New South Wales. The National Water Initiative makes it clear that having in place transparently developed water plans which include an agreed pathway for dealing with known overallocation and/or overuse is a precursor to an effective risk assignment framework.

The Commission considers New South Wales has made satisfactory progress in meeting its COAG commitments in this area.

### 2.2.5 Indigenous Access

#### Assessment Issues

The Commission is looking for New South Wales to show that it has in place arrangements for the incorporation of Indigenous water issues into water planning processes, including the recognition of the possible existence of native title rights to water.

New South Wales has recognised Indigenous interests through a number of mechanisms in its water reform processes. The *Water Management Act 2000* and individual water sharing plans include benefits to Indigenous people in relation to their spiritual, social, customary and economic uses of water.

Within New South Wales, native title rights have been recognised under the basic landholder rights provisions of the *Water Management Act 2000*. These provisions allow a native title holder, who is exercising native title rights, to take and use water, without the need for a water access licence or approval. Each of the water sharing plans recognise that extractions as part of a native title right may increase over the term of the water sharing plan. In addition, applications for consents under the *Water Management Act*

*2000* (for a new grant of water, or an approval) are notified to native title claimants in accordance with the *Native Title Act 1993*.

Other mechanisms include:

- Indigenous representation in water management committees, such as from Local Land Councils or Elder Groups, and the soon to be established Catchment Management Authority Aboriginal reference groups
- protection of cultural heritage, where all new or amended water supply works and use approvals are assessed to ensure no impact on Indigenous cultural heritage
- Indigenous access to water in the form of Aboriginal Cultural Access Licences provided for under a water sharing plan, and
- the Aboriginal Water Trust (funded at \$5 million over two years) to be established by 2007 to support Indigenous people to participate in commercial businesses.

## Submissions

The Combined Environmental NGOs raised the concern that considering water for Indigenous use is in most cases included in the allocation for environmental water in New South Wales (see 'Submissions' in Section 2.2.1 on Water Access Entitlements for more detail on this issue of determining water for the environment). This means that the security of the entitlement for Indigenous use and the amount able to be used are unclear. The Combined Environmental NGOs are concerned that the allocations for Indigenous use are not being properly provided for.

## Discussion and Assessment

As required for this assessment, New South Wales has shown that it has in place arrangements for the incorporation of Indigenous water issues into water planning processes, and is soon to introduce more programs to further this process. The New South Wales Government also recognises the possible existence of native title rights to water, which is provided for under the *Water Management Act 2000* and individual water sharing plans.

The security of allocation for environmental water, and associated Indigenous entitlements, has been identified as



an issue and is discussed in Section 2.2.2 on Environmental and Other Public Benefit Outcomes, and Section 2.2.3 on Water Planning and Addressing Currently Overallocated and/or Overused Systems.

The Commission considers that New South Wales has met its COAG commitment in this area.

## 2.2.6 Interception

### Assessment Issues

The Commission will look for New South Wales to provide information on the steps being taken to implement water interception measures detailed in the National Water Initiative, including any application of the National Water Initiative provisions to recent activities.

**New South Wales is taking steps to address and regulate, where necessary, two key types of interception: interception by farm dams, and floodplain harvesting.**

Currently, all interception of water by farm dams in New South Wales must be in accordance with the Harvestable Rights Order under the *Water Management Act 2000*. This is achieved by the determination of basic harvestable rights above which all interception must be licensed.

There is no restriction on the size of storage that can be constructed; however, the owner has to be within a 'harvestable rights area', which specifies the proportion of average runoff that may be captured from their property. The harvestable right volume is calculated using average regional climatic information and is dependent on the size of the property. Harvestable rights dams can be constructed on ephemeral first or second order streams only.

Regulation of floodplain harvesting activities, under the floodplain harvesting policy, will be carried out through water access licences. All water extraction (other than extraction associated with basic rights for stock and domestic purposes) must be licensed under the *Water Management Act 2000*. Water access licences and works approvals will be issued for all current approved works that are associated with floodplain harvesting.

Floodplain harvesting is currently not covered by existing water access entitlements and it is not covered by the 31 water sharing plans that commenced operation on 1

July 2004. To address this, New South Wales has started reviewing the existing policy framework, delivering new policy where required. This policy will be based on the outcomes of a pilot project in the Gwydir Valley. It intends to:

- update the current policy advice to ensure applicability across the state
- establish a process and timeline for audits of floodplain extraction works
- establish a process and timeline for delivery of floodplain harvesting outcomes within the water sharing plan framework, and
- develop rules for issuing floodplain harvesting licences under section 55A of the *Water Management Act 2000* within the Murray-Darling Basin Cap for inland river systems and agreed extraction limits for coastal river systems.

This policy is expected to be finalised by the end of 2005. It is expected to be applied in existing water sharing plan areas by 2007 and in currently unplanned areas on implementation of a new water sharing plan.

At the same time as the development of the above audit process, work has been progressing on the review and redrafting of current policy advice as it relates to overland flows, particularly for activities on the state's floodplains. This policy will allow the amendment of existing water sharing plans and preparation of new water sharing plans to incorporate floodplain harvesting activities.

### Discussion and Assessment

New South Wales is taking some steps to implement water interception measures as detailed in the National Water Initiative.

The state government is developing a floodplain harvesting policy that will provide an audit of floodplain extraction works, integrate floodplain harvesting outcomes into water sharing plans, and develop a licensing system for floodplain harvesting.

New South Wales has not indicated the level of stakeholder consultation for the development of this policy in areas other than in the Gwydir catchment pilot area.

It states that the policy development is being driven at

a regional level with a high degree of local stakeholder input. The Commission anticipates that there will be more stakeholder consultation before the policy is finalised and incorporated into water sharing plans.

The current work in New South Wales does not incorporate the issue of significant interception by different uses such as plantation forestry. Nor are there any provisions in the *Water Management Act 2000* to address this. New South Wales has indicated that it plans to undertake an assessment of the significance of large-scale plantation forestry on catchments and aquifers from 2007 to 2011. Under the National Water Initiative, measures to address water interception by landuse change are to be implemented no later than 2011.

As required for this assessment, New South Wales has reported on its activities to address implementation of water interception measures detailed in the National Water Initiative. Hence, for the purposes of this assessment, the Commission considers that New South Wales has met its COAG commitments. The Commission will continue to track New South Wales' progress on addressing interception.

## 2.3 Water Markets and Trading

### Assessment Issues

Trading arrangements in water entitlements are to be instituted to maximise water's contribution to national income and welfare, where systems are physically connected or hydrologic connection and water supply considerations permit trading. Under the 1994 Water Reform Framework, trading arrangements were to be finalised by 2005. The National Water Initiative expands and re-defines the 1994 water reform commitments.

Consistent with its COAG water reform commitments, the Commission expects New South Wales to:

- have removed remaining institutional barriers to temporary trade
- by June 2005, reduced barriers to permanent trade by taking the necessary legislative and other actions to permit open trade and ensure competitive neutrality
- by June 2005, taken all necessary steps to enable exchange rates and/or tagging of water access

entitlements and establish an interim annual threshold limit of 4 per cent on permanent trade out of water irrigation areas

- demonstrate trading rules in existing water management plans facilitate trading consistent with the actions and outcomes of the National Water Initiative and demonstrate a process is in place to incorporate trading rules consistent with the National Water Initiative into new water plans
- have pathways in place by the end of 2004, leading to the full implementation by the end of 2006, of compatible, publicly-accessible and reliable water registers of all water access entitlements and trades, and
- be developing arrangements for permanent interstate trading beyond the Murray-Darling Basin Commission pilot project, including for the border rivers.

### Current Arrangements for Trade

Under the New South Wales *Water Management Act 2000*, water access licences (entitlements) are separate from land, divisible and permanently and temporarily transferable. The water share component is separated from the extraction component and these can be independently transferred. Entitlements and associated third-party interests are publicly registered and the consent of third parties is required before a transaction can proceed. All transfers must be consistent with the provisions of the Act and the system specific trading rules within water sharing plans. Ministerial consent is required for a permanent transfer that involves a change in extraction location, to manage potential environmental and third-party impacts.

In irrigation areas, irrigation corporations and cooperatives<sup>2</sup> hold bulk water access licences and provide a share of water to each individual irrigator within the irrigation district. Any trade into or out of the irrigation district must be done through the irrigation corporation. Some corporations limit trade out of their district, ranging from prohibition of permanent trades out, to the prescription of the minimum level of entitlement that must be retained on each property or the maximum level of entitlement that may be traded out of an area.

<sup>2</sup> Referred to as irrigation corporations in this assessment

Four main types of water trades occur in New South Wales.

- *transfer*—the permanent transfer of a water access licence (share component and delivery component); interstate transfers are currently available only within the Mallee Region of the Murray River
- *term transfer*—temporary transfer of a water access licence (for a minimum period of six months)
- *share component assignment*—the permanent transfer of the whole or part of the share component of a water licence, and
- *water allocation assignment*—the temporary trade of all or part of the water allocation under a water access licence. Water allocation assignments are currently available only on regulated rivers. Interstate allocation assignments are possible to and from New South Wales, Victoria and South Australia for the Murrumbidgee, Murray and Lower Darling Rivers. Water allocation assignments will be extended to unregulated river and groundwater systems as these systems are metered.

In the remaining areas of New South Wales where water sharing plans have not yet commenced, water is transferred by lifting water from the seller's land and supplying it to the buyer's land. The seller's licence is then cancelled. The buyer has to apply for the new licence, and this involves an environmental assessment. Revised trading arrangements are progressively applied as the new plans are commenced, which are further discussed in Section 2.2.1 on Water Access Entitlements.

New South Wales actively participates in the Murray-Darling Basin Commission pilot project for permanent interstate trade (refer Murray-Darling Basin Commission Chapter 10).

New South Wales allows temporary interstate trade to Victoria and South Australia. Temporary interstate trade currently occurs between the connected Murrumbidgee, Murray and Lower Darling systems.

Limited temporary trade between New South Wales and Queensland currently occurs on the Border Rivers. A more open temporary trade will occur with the completion of the New South Wales – Queensland Border Rivers Intergovernmental Agreement by mid-2006.

## Trading Rules and Approvals

System specific trading rules are set through the relevant water sharing plans. Some 31 water sharing plans, which cover some 80 per cent of the water use in New South Wales, commenced on 1 July 2004. New South Wales' Access Licence Dealings Principles Order 2002<sup>3</sup> (NSW Government, 2002), set under the *Water Management Act 2000*, provide the basis for these rules. The Access Licence Dealings Principles Order specifies state-wide rules as follows:

- dealings should not adversely affect environmental water and water dependent ecosystems as identified in any relevant management plan
- dealings should be consistent with any strategies to maintain or enhance water quality identified in any relevant management plan
- in unregulated river water sources, dealings should not increase the take of water from water sources or parts of water sources that have been identified in any relevant management plan as being of high conservation value, and
- in unregulated river water sources or groundwater sources, dealings should not increase the take of water from water sources or parts of water sources above sustainable levels identified in any relevant management plan.

Water sharing plans have tailored these principles to determine the individual rules that will apply to the water source, taking into account the level of stress and water source or operational constraints. Many plans nominate zones to which water dealings are restricted for environmental reasons or because there is a limited supply capacity.

Ministerial consent is required for the transfer of a water licence. All transfer applications are assessed and must be consistent with the statewide rules and any additional rules that are specified in the relevant water sharing plan.

<sup>3</sup> Access Licence Dealings Principles Order 2002 applies to water sharing plans gazetted on or before 30 June 2004, and Access Licence Dealings Principles Order 2004 applies to water sharing plans gazetted on or after 1 July 2004 ([www.legislation.nsw.gov.au](http://www.legislation.nsw.gov.au)).

The next round of plans is being developed through the 'macro' planning process. The trading rules in these new plans must be consistent with the Access Licence Dealing Principles Order 2004 (NSW Government, 2004). However, trading may be further managed by system specific trading rules in the relevant 'macro' water sharing plan.

The New South Wales Access Licence Dealing Principles prohibits transfers from unregulated rivers to regulated rivers. New South Wales advises that this restriction is in place to manage the potential disruption in the planned levels of extraction in the regulated water source and any consequent impacts on the environment and other licence holders. A move to a regulated water source means that the water is secured by a large storage, which results in a more reliable water supply. New South Wales' concern is that this will mean more water will be delivered to the water access licence than was anticipated when it was issued (originally for the unregulated source).

Trading rules within regulated river water sharing plans do not allow the conversion of a high security access licence share to a general security access licence share unless there has been a corresponding (or larger) conversion the other way (from general security to high security). The effect is to prohibit a net increase in general security access licence shares. This restriction is designed to protect the reliability of supply for general security users, so that it remains at the levels that applied at the commencement of the relevant water sharing plan. New South Wales notes that the application of too high an exchange rate to such conversions will result in a net increase in the overall general security water extraction limit specified in the plan.

System specific trading rules also apply. For example, when a general security licence was converted to a high security licence in the Murray and Lower Darling river valleys in 2004–05 (under the 2004–05 Murray Annual Allocation Plan) the resulting high security licence could not be traded for five years. This rule is designed to prevent licence holders converting to high security during times of low general allocation and then reconvert to general security when more water becomes available.

New South Wales advises that the Natural Resources Commission will be reviewing trade restrictions in current water sharing plans in the fifth year of the plans (2009 for

the 31 commenced plans). As part of this review, the Natural Resources Commission will identify justifications for any continuance of restrictions that are not aimed at protecting the environment or ensuring the practical management of trading.

New South Wales appears to be well advanced in the implementation of a publicly accessible register of all water access entitlements and trades. The register currently covers most licences in water sharing plan areas. Information about permanent trades is available on an individual licence basis through the register, and information about temporary trades is available through an online service. New South Wales is planning to develop a register of permanent trades by water source, to improve monitoring arrangements.

The time taken to process trades was expected to be significantly reduced by the new water management arrangements. Nevertheless, processing times for share assignments exceed New South Wales' own benchmarks. New South Wales advises that delays are due to a range of once-only factors including the commencement of the new application database.

New South Wales is actively participating in the COAG Water Trading Group, coordinated by the Department of the Prime Minister and Cabinet, which is overseeing the implementation of the opening up of permanent trade in water entitlements in the southern Murray–Darling Basin. That group is also overseeing the trading studies that will be conducted under the National Water Initiative.

## Recent Reforms

New South Wales has legislated to remove barriers to permanent trade into and out of irrigation corporation areas, including the establishment of an interim annual limit of up to four per cent trade out of the areas, through the recent amendments to the *Water Management Act 2000* (the *Water Management Amendment Act 2005*). This legislation will impose financial penalties on irrigation corporations that do not permit permanent trade to the interim threshold limit. The legislation is scheduled for commencement in January 2006.

Five irrigation corporations are affected, and they can impose this limit only with the agreement of their shareholders. Constitutional amendments are required in three of the corporations—Murray Irrigation Limited, Western Murray Irrigation Limited, and Coleambally Irrigation Co-operative. All five of the irrigation corporations are also developing proposals to address concerns that the net permanent trade of water out of their irrigation areas could result in stranded infrastructure assets. New South Wales advises that the general position of the corporations is that permanent trade out of irrigation corporation areas will allow for up to four per cent of their tradeable entitlement, on payment of an exit fee. The irrigation corporations will be considering these changes at their annual general meetings in late 2005 and early 2006.

New South Wales advises that, in line with the new legislation, it is expected that the four per cent interim threshold will be fully operational in all five irrigation corporations by January 2006.

Under its COAG commitments, New South Wales has agreed to consider the use of water access entitlement exchange rates or water access entitlement tagging to facilitate intrastate and interstate trade. Following the 2004 and 2005 amendments to the *Water Management Act 2000*, the legislative arrangements for water access entitlement tagging for interstate trading are in place in New South Wales. Negotiations are currently underway between New South Wales, Victoria and South Australia on appropriate exchange rate and/or tagging arrangements for interstate trade in the southern Murray-Darling Basin.

Discussions between New South Wales and Queensland are currently underway on an intergovernmental agreement on trading in tagged entitlements on the Border Rivers system.

New South Wales advises that tagging is also the preferred approach to water accounting when water is traded between different water sources within the state. Legislative amendments have been made through the *Water Management Amendment Act 2005* to extend tagging to the management of intrastate trades between the connected Murrumbidgee and Murray – Lower Darling regulated river systems. The Access Licence Dealings Principles specify where tagging can occur.

## Submissions

In its 2005 submission, the World Wildlife Fund Australia (WWF–Australia) comments that the environmental impacts of transferring water need to be fully understood before allowing water to be traded. Water trading that results in a negative impact on the environment, either through in-stream impacts or on-ground use, should not be allowed. Where these impacts are not fully understood, a precautionary approach must be applied.

The Combined Environmental NGOs' submission notes their concern that current water accounting systems may not adequately account for the possible environmental impacts of transfer of entitlements.

The New South Wales Irrigators' Council raises a number of concerns in its submission regarding the expansion of water markets in New South Wales, primarily focused on the pace and sequencing of reforms and the lack of market information, and potential impacts on irrigators.

## Discussion and Assessment

New South Wales has taken steps to build an effective legislative and administrative framework to enable water trading. Nevertheless, there are some constraints on trade that may hinder the broadening and deepening of both intrastate and interstate water markets.

As agreed in its COAG commitment, New South Wales is to immediately remove all institutional barriers to temporary trade of water entitlements; however, some barriers still remain. For example, in the Murrumbidgee Water Sharing Plan (DIPNR, 2004e), temporary trade is prohibited for high security licence allocations after 1 September and, for general security licence allocations, after the end of February. The Commission acknowledges that such a rule is intended to ensure that environmental objectives of the system can be met. The Commission notes that there may be scope for using more adaptive approaches that give greater flexibility to consumptive users to buy water when they need it, or sell when they have excess allocation. A robust water planning and entitlement regime will ensure that water provided for environmental outcomes is secured along with allocations for consumptive use.

For this assessment, the Commission is looking for New South Wales to be well-advanced in the removal of any existing institutional barriers to permanent water trade. The Commission is also looking for the development of the necessary legislative and administrative arrangements to establish an interim annual threshold limit of four per cent of total water access entitlement for permanent trade, including permanent trade out of water irrigation areas.

The Commission is satisfied with the Queensland and New South Wales approach to developing interstate trading arrangements for the Border Rivers. The Commission urges the two states to continue to work to have the necessary arrangements in place by mid-2006 (the current timetable).

Under its COAG commitments, New South Wales has agreed that restrictions on trade will be applied only to protect the environment or ensure the practical management of trading, in a way that is consistent with the National Water Initiative Principles for Trading Rules. The state has also agreed that additional restrictions will be applied only if they are supported by a robust case built on publicly available information.

For the most part, New South Wales' trading rules (guided by the Licence Dealings Principles Orders 2002 and 2004, set under water sharing plans) are consistent with the principles set out in the National Water Initiative. Even so, the Commission has identified a number of trading rules in water sharing plans that are not consistent with its COAG commitment. These could pose a considerable barrier to the expansion of water markets in some systems.

The New South Wales Access Licence Dealing Principles Orders 2002 and 2004 prohibit transfers from unregulated river sources to connected regulated river sources. The Commission understands that New South Wales applies this restriction to manage any potential disruption in the planned levels of extraction in the regulated water source. The Commission agrees with New South Wales that a move to a regulated system means that the water is secured by a storage and hence the reliability of water delivery is increased. Nevertheless, the Commission considers that the application of system specific rules to protect the environment and manage third-party impacts should be used, rather than applying such a wide-ranging trading restriction.

Under the access licence dealings rules in current regulated river water sharing plans, the conversion of a regulated river licence from high security to general security can occur only if the conversion does not result in a net increase of the total general security share component set under the plan. The Commission notes that New South Wales has included this rule to protect third-party entitlement security that could be eroded by greater demand within the consumptive pool. Again, the Commission can see no reason for such impacts being managed in this way, rather than through other mechanisms in the allocation and planning process.

When a general security licence was converted to a high security licence in the Murray and Lower Darling river valleys in 2004–05 (under the 2004–05 Murray Annual Allocation Plan) the resulting high security licence can then not be traded for five years. The 2005–06 Murray Annual Allocation Plan is not yet available. Again, the Commission considers that such impacts are better managed through the allocation and planning regimes.

Restrictions on temporary trade in the Murrumbidgee Water Sharing Plan have been identified earlier.

Overall, the Commission is concerned that the restrictions identified above have the potential to inhibit the deepening of intrastate and interstate water markets by preventing the development of a range of water products to meet users' needs and encourage investment.

The Commission notes that the Natural Resources Commission will be reviewing trade restrictions in water sharing plans in the fifth year of the current water sharing plans (this will be in 2009), and that the justification for any continuance of restrictions that is not aimed at protecting the environment or ensuring the practical management of trading will be identified. To meet its COAG commitments, New South Wales will need to ensure that any trading rules that present a potential barrier are removed, or amended, or provide a robust public benefit case for their continuance. The Commission reiterates New South Wales' commitment on signing the National Water Initiative to immediately remove barriers to temporary trade and remove barriers to permanent trade by June 2005.

The Commission is satisfied with New South Wales' progress in the implementation of a robust, publicly accessible water entitlement register that recognises third-party interests. The Commission reiterates the importance of a strong entitlement register in underpinning market confidence. The Commission notes that New South Wales is also working with other jurisdictions to ensure compatibility between jurisdictions' respective entitlement registers. Compatible entitlement registers will help minimise transaction costs and improve market information to support the expansion of the interstate water market. The Commission also notes that New South Wales is also actively participating in a national process to improve water measurement and accounting processes, with a particular focus on areas where water is traded.

The Commission notes that New South Wales is taking steps to improve the timeliness and process for the approval of trades.

### Southern Murray-Darling Basin Water Trading Progress

For this assessment, New South Wales, Victoria and South Australia were to demonstrate that, by June 2005, they had taken all necessary steps, including making corresponding legislative and administrative changes, to enable exchange rates and/or tagging of water access entitlements, in order to enable the expansion of interstate trade in the southern Murray-Darling Basin (in accordance with clauses 63 (i) and (ii) of the National Water Initiative).

The Commission is pleased that New South Wales passed legislation in late 2005, for commencement in January 2006, to require irrigation corporations to allow, and continue to allow, permanent trade to the interim threshold of four per cent of water entitlement for the irrigation area (or financial penalties will be imposed). The Commission notes that the Irrigation Corporations are required to make corresponding changes to their arrangements (some via amendments to their constitutions) to permit permanent trade up to the four per cent limit.

The legislative arrangements for interstate water access entitlement tagging in the southern Murray-Darling Basin are in place in New South Wales. However, Victoria and South Australia have not yet put corresponding

administrative arrangements in place that will allow for tagging based trade across state borders. Nor have the three states developed all the arrangements necessary for practically managing tagged interstate trade once it becomes administratively possible.

All states have been actively participating in the Murray-Darling Basin Commission pilot project for permanent interstate trade. Furthermore, New South Wales, Victoria and South Australia have previously agreed (in the Murray-Darling Basin Commission context) that a system of exchange rates would be used to enable the expansion of permanent interstate trade. In this context, all states had been working for a number of years to develop a matrix of exchange rates. In the second half of 2005, New South Wales rejected the modelled exchange rate, insisting that tagging should be used for interstate trading.

As a result, at 1 January 2006, water was unable to be traded between all three states in the terms of the COAG commitment because the necessary steps had not been collectively taken by New South Wales, Victoria and South Australia. Furthermore, the continuing stalemate - with New South Wales not agreeing to trade using the Murray-Darling Basin Commission determined exchange rate matrix and the inability of Victoria to deliver tagged trade until it introduces the necessary administrative arrangements (mid-2007), and South Australia's lack of a timetable for tagging - means that meeting the COAG commitments in this area will continue to be delayed. In addition, the Commission notes that there are other matters still to be settled to operationalise trading in the southern Murray-Darling Basin (including changes to Schedule E to the Murray-Darling Basin Agreement which provides the institutional and regulatory framework for the operation of interstate trade in this part of the Basin).

The failure of southern Murray-Darling Basin states to reach agreement on the necessary arrangements is preventing the further opening up of the interstate water trading market as required by the COAG commitments, representing a major setback to the COAG water reform process.

The Commission recognises that considerable effort has been made by all three jurisdictions to progress the development of interstate trading arrangements. Nevertheless, it appears that interstate trade between all

states in the southern Murray-Darling Basin is unlikely to be enabled before 1 July 2007 at the earliest.

The Commission also notes that states are developing bilateral arrangements to allow some interstate trade before July 2007. The Commission understands that New South Wales and Victoria have explored arrangements whereby they can trade using a manual water access entitlement tagging system. At the time of drafting this report, Victoria and South Australia were close to finalising an agreement to allow for trade between those two states using exchange rates.

However, while each state is making some progress towards expanding interstate trade on a bilateral basis, they have manifestly not met their collective commitments to open up interstate trade of permanent water entitlements across the southern Murray-Darling Basin.

The Commission notes the advice of the three southern Murray-Darling Basin states that they are working toward a tagging-based trading system across all jurisdictions by July 2007; however, the Commission considers this an unacceptable delay because it is two years behind the National Water Initiative timeframe for implementation of this key element of water reform.

Also, the Commission is concerned at the prospect of further slippage by the states in meeting these commitments. In the Commission's view, it is critical to maintain momentum on the further expansion of interstate water markets – permanent and temporary – to realise many of the gains of national water reform.

Given the states' failure to meet their commitment in respect of a major element of the COAG water reforms, and in view of the Commission's concerns about the prospect of further slippage, the Commission recommends a suspended National Competition Policy payment penalty of five per cent for each southern Murray-Darling Basin state. The Commission recommends that this payment be recoverable if the states collectively demonstrate, to the Commission's satisfaction, compliance with the following conditions by 1 January 2007:

- that water access entitlements can be permanently traded freely between all interstate sources in the southern Murray-Darling Basin (beyond the existing

limitations of the Murray-Darling Basin interstate trade pilot) in accord with the initial COAG National Water Initiative commitment to open up permanent water trade in this region

- that any remaining barriers (for example, in the way water entitlements are specified and converted, administrative barriers, unjustified trading rules, or unacceptable transaction costs) that may affect potential trade have been identified, and
- that there are timely and sufficient steps being taken to overcome any such remaining barriers.

The Commission signals now its intention to recommend that the suspended payments become permanent deductions if the three states collectively are not able to demonstrate, to the Commission's satisfaction, compliance with the above conditions by 1 January 2007.

## 2.4 Best Practice Water Pricing and Institutional Arrangements

---

### 2.4.1 Water Storage and Delivery Pricing

---

#### 2.4.1a Metropolitan

---

##### Assessment Issues

##### *Consumption based pricing*

New South Wales is required to demonstrate that urban water services, metropolitan bulk water suppliers, groundwater, stormwater and wastewater suppliers are applying pricing regimes based on the principle of consumption-based pricing. In particular New South Wales is required to demonstrate that the Sydney Water Corporation's property value-based charges have been phased out, consistent with the 2003 pricing determination.

##### *Full cost recovery*

New South Wales is required to demonstrate that there has been substantial movement towards upper bound pricing for all metropolitan water and waste water businesses. For those businesses that are not pricing close to the upper bound of cost recovery, New South Wales should demonstrate price paths are in place that will move them towards the upper bound of cost recovery.



### *Dividends*

New South Wales is required to demonstrate that dividend policies for metropolitan water and wastewater businesses comply with COAG obligations. In particular, New South Wales is required to demonstrate that the water and wastewater businesses operated by Gosford and Wyong Councils have complied with COAG requirements, including for taxes or tax equivalents and dividends, in the 2005 price determination.

### **Consumption Based Pricing**

**Metropolitan bulk water, urban water services and storm and wastewater services in New South Wales are provided by the Sydney Catchment Authority, Sydney Water Corporation, the Hunter Water Corporation, the Gosford City Council, and the Wyong Shire Council.**

The pricing policies of the Sydney Catchment Authority, Sydney Water Corporation, the Hunter Water Corporation, the Gosford City Council, and the Wyong Shire Council are determined by the Independent Pricing and Regulatory Tribunal (IPART). Prices for these water and wastewater businesses are set through a two-part tariff, consisting of both a fixed usage charge and a variable consumption-based charge.

New South Wales has demonstrated that charges based on property values have been removed for residential and non-residential wastewater and stormwater services. As noted in the 2003 National Competition Policy assessment, IPART set a price path for the Sydney Water Corporation in May 2003, which applied until 30 June 2005. The price path removed all of the Corporation's remaining property-based charges. New South Wales has also provided information demonstrating the current and future basis of charges for wastewater (residential and non-residential) and stormwater (residential) from 2004–05 to 2008–09.

For wastewater, all customers are charged a service charge (dollars per year). For residential customers, this is based on 20 millimetre wastewater service connection and 100 per cent discharge. For non-residential customers the following formula is applied:

service availability: charge = (meter size)<sup>2</sup> x 20mm charge / 400

A discharge factor is also applied. Wastewater usage charges (dollars per kilolitre) are applied to non-residential properties.

For stormwater, all residential and non-residential customers are charged on a dollar per year basis. New South Wales proposes to move to an area-based stormwater charge for non-residential properties after 2009. All prices are adjusted for future changes in the consumer price index.

### **Cost Recovery**

Prices for the Sydney Water Corporation, Hunter Water Corporation and Sydney Catchment Authority have reached the upper bound. Both the Sydney Water Corporation and the Hunter Water Corporation pay dividends and tax equivalents. In addition, IPART has established a regulatory asset base for each. IPART released its latest report and determination for Sydney Water Corporation, Hunter Water Corporation and Sydney Catchment Authority on 2 September 2005 (IPART, 2005). IPART's determination provides for a rate of return of 6.5 per cent for both the Sydney Water Corporation and Hunter Water Corporation assets.

Gosford and Wyong councils are moving towards upper bound cost recovery. IPART has released its price determinations for Gosford and Wyong councils to apply in 2005–06, providing for a rate of return of 3.7 per cent. In addition, IPART has commenced a medium-term price path for Gosford and Wyong councils, to be released in May 2006, by which time the councils will have formulated their long term strategy to resolve the current imbalance in demand and supply.

### **Dividends and Tax Equivalents**

IPART has analysed a range of financial indicators that are commonly used by credit rating agencies to assess an entity's financial capacity and ability to service and repay debt. This analysis (contained in the determination report for 2005–06) shows that both Wyong and Gosford councils should be able to maintain a sound financial position during 2005–06.

In the same determination report, IPART noted that changes to the Local Government Act 1953 means that dividends can now be paid by the council's water and sewerage business to their general funds, subject to satisfying various reporting and approval requirements. Based on the financial

indicators and credit ratings shown above, IPART estimates that Gosford and Wyong councils would have the funds available to pay a dividend during 2005–06. IPART notes that Gosford Council stated in its submission that it wanted to pay a dividend, but did not specify the amount. Wyong Council provided for tax equivalents, but not for a dividend. The 2005 determination therefore provides Gosford and Wyong councils with the capacity to pay tax equivalents and dividends.

Dividend payments are determined by negotiation between shareholders (Ministers of State as representatives of the people of New South Wales) and the management boards of each government business, with the ultimate determination reserved for the shareholders.

Negotiations typically include: maintaining an acceptable level of financial risk, as indicated by the businesses' individual credit rating; ability to service debt; capacity to finance the approved capital programme; the need for sufficient flexibility for contingencies; and dividend preferences of shareholders. Though negotiated with reference to after-tax profits, dividends are not necessarily expressed as a pay-out ratio, as is the case for private sector practice.

The *Public Finance and Audit Act 1983* provides the legislative basis for dividend payments. Section 59B of the Act gives the Treasurer the power to require prescribed government businesses to pay dividends to the consolidated fund. This would not preclude the Treasurer requiring only the provision for payment of dividends if so desired.

The New South Wales Treasury's financial distribution policy adopts the private sector definition of dividends, as provided by the *Corporations Act 2001*, whereby a dividend may be paid only out of the profits of the company. A notional upper-limit for dividend payments is thus the current year profits plus retained earnings. In general, however, annual dividend payments are unlikely to exceed current year profits.

The *Best Practice Management of Water Supply and Sewerage: Guidelines* (DEUS, 2004) do not require a tax equivalent to be paid in circumstances where the payment would create a significant increase in a typical residential bill.

## Discussion and Assessment

### Consumption Based Pricing

New South Wales has provided information on the pricing arrangements for urban water services, bulk water suppliers, stormwater and wastewater suppliers, and has demonstrated that these businesses are applying consumption-based pricing principles.

On the basis of the above information, the Commission considers that New South Wales has met its COAG commitment with regard to the implementation of consumption-based pricing in metropolitan bulk water supply, urban water, and stormwater and wastewater supplies.

By demonstrating that Sydney Water Corporation's property value-based charges for wastewater and stormwater have been phased out, the Commission considers that New South Wales has met its COAG commitment for this component of the assessment.

### Cost Recovery

New South Wales has demonstrated that prices for the Sydney Water Corporation, the Hunter Water Corporation and the Sydney Catchment Authority have reached the upper bound, and that Gosford and Wyong councils are moving towards the upper bound, with a medium-term price path in place for both councils.

On the basis of this information, the Commission considers that New South Wales has met its COAG commitment with regard to cost recovery.

### Dividends and Tax Equivalents

With respect to dividend payments, the New South Wales Treasury's financial distribution policy adopts the private sector definition of dividends, as provided by the *Corporations Act 2001*, whereby a dividend may be paid only out of the profits (both current and retained) of the water business.

The dividend payments are determined by negotiation between shareholders and the management boards of each government business, with the ultimate determination reserved for the shareholders. These negotiations take place every year.

On the basis of the above information, the Commission considers that New South Wales has satisfactorily met its commitment with regard to its dividend policies.

The 2005 price determination provides Gosford and Wyong councils with the capacity to pay tax equivalents and dividends. However, it is noted that the *Best Practice Management of Water Supply and Sewerage: Guidelines* do not require a tax equivalent to be paid in circumstances where the payment would create a significant increase in a typical residential bill.

On the basis of the above information, the Commission considers that New South Wales has met its COAG commitments to demonstrate that the water and wastewater businesses operated by Gosford and Wyong councils have complied with COAG requirements, including for taxes and tax equivalents.

### 2.4.1b Rural and Regional

#### Assessment Issues

##### *Cost Recovery*

**New South Wales is required to demonstrate for rural systems that:**

- they have achieved at least the lower bound of cost recovery, or
- they have established a price path that achieves the lower bound of cost recovery with transitional Community Service Obligations made transparent, and
- are continuing to move toward the upper bound where practicable.

In addition New South Wales is required to demonstrate that the regional water businesses are complying with the COAG pricing principles and :

- have achieved the lower bound of cost recovery, and
- are moving toward the upper bound of cost recovery, where practicable.

##### *Consumption based pricing*

New South Wales is required for rural systems to:

- demonstrate that they have removed 'free water allowances'
- demonstrate that substantial application of consumption-based pricing in rural water services has been achieved

- report on tariff composition for regulated rivers, and
- report on progress with its staged implementation programme for two-part tariff charging for unregulated river systems.

New South Wales should also provide information on metering and monitoring of water use in groundwater management areas to enable the Commission to assess the extent to which consumption-based pricing is being applied, consistent with water reform s.

- In addition, New South Wales is required to demonstrate that regional water business have introduced consumption-based pricing.

##### *Cross-subsidies and community service obligations*

New South Wales is required to:

- Report on the level of remaining cross-subsidisation and show that the next price path, to commence on 1 July 2005, will phase out these subsidies, and
- Demonstrate that remaining State Water Community Service Obligations are being clearly defined, costed and transparently reported in the corporation's annual reports.

##### *Murray-Darling Basin Commission Costs*

New South Wales is also required to provide information on its review of the Murray-Darling Basin Commission cost allocation and demonstrate that its share of the Murray-Darling Basin Commission bulk water delivery costs and water resource management costs are publicly reported and transparently allocated among users.

##### *Cost Recovery - Rural Systems*

**A large number of New South Wales' rural systems have achieved lower bound cost recovery. For 2004–05, IPART estimates 96 per cent cost recovery in regulated systems, 30 per cent in unregulated systems and 37 per cent in groundwater systems.**

**For the 2005 determination, IPART decided to:**

- **increase—by ten per cent above the movement in the consumer price index (real increase)—charges in valleys where current charges are considered to be below full cost recovery, and**
- **maintain the level of all other charges in real terms for those systems which are in line with full cost recovery.**

IPART is presently conducting a review of prices from 1 July 2006. As a result of this review, IPART will re-examine efficient costs and cost recovery. IPART will put in place price paths that will continue to move prices toward the lower bound.

During the course of the current review, IPART will also consider whether it should target upper bound prices for those valleys that are achieving lower bound prices and if so, how this can best be achieved.

#### Bulk Water

In its 2005–06 determination, IPART indicates that it is conscious of the need to set maximum prices for bulk water services that more adequately recover the costs that State Water and the Department of Natural Resources incur in providing bulk water services. It also recognises that it has an important role in defining what constitutes full cost recovery when it assesses and allocates costs.

IPART notes that the cost base for bulk water has increased over time, and that this is partly due to increasing recognition of the need for significant expenditure to better manage the bulk water system and mitigate its environmental impacts. Likewise, the prices paid by customers have increased significantly as more of these costs are recognised and incorporated into pricing schedules. Nevertheless, the level of cost recovery is still very low for a number of valleys.

Given the differences in the various estimates of costs available, and the fact that State Water's most recent changes to its proposed costs have not been reviewed, IPART was not confident that the proposed costs for 2005–06 were a good basis for determining the level of costs that bulk water charges should recover in this year. IPART therefore decided to also use the costs established for the 2001 determination in reaching its decision for 2005–06.

In its most recent submission to IPART, State Water notes the expected removal of the New South Wales government operating subsidy in valleys where costs are not fully recovered from users. The value of this subsidy is approximately \$10 million per year. State Water is advocating a price path that will achieve full cost recovery over five years.

#### Regulated Rivers

In New South Wales, cost recovery for regulated rivers has been improving. The regulated river systems, which account for approximately 86 per cent of revenue from bulk water sales, are estimated to have recovered 96 per cent of lower bound costs in 2004–05. The following regulated rivers have achieved (or are very close to achieving) lower bound pricing: the Border, Gwydir, Namoi, Lachlan, Macquarie, Murray and Murrumbidgee rivers. Unregulated river and groundwater systems each recovered, on average, just over 35 per cent of lower-bound costs.

IPART noted that, for regulated rivers, most valleys are close to or above full cost recovery (based on 2001 costs adjusted for inflation); however, some are significantly below. For unregulated rivers and groundwater sources revenues are significantly below costs for all valleys.

#### Local Water Utilities

New South Wales' non-metropolitan water and wastewater businesses are encouraged to apply appropriate pricing as set out in the Best Practice Management of Water Supply and Sewerage: Guidelines. These guidelines require each local water utility to prepare strategic business plans for the next twenty years and to establish an appropriate level of annual income from water supply, sewerage and trade waste charges. At the time of writing, over 80 per cent of local water utilities had prepared at least draft strategic business plans.

The local water utilities that comply with the guidelines and elect to pay a dividend from their water or sewerage business will be moving towards upper bound pricing.

The Department of Energy, Utilities and Sustainability is continuing to work with the non-complying local water utilities to move to full cost recovery. Any local water utility not achieving full cost recovery is expected to have completed phasing-in of full cost recovery within three years.

#### Consumption-based Pricing

##### *Bulk Water*

The State Water operating licence requires it to ensure that its pricing policies place greater importance on usage charges.

The pricing policies and practices of State Water must be consistent with the COAG Strategic Framework for Water Reform and other COAG initiatives relating to water. In particular, State Water must ensure:

- the usage based component on charges is not lower than 50 per cent by 1 July 2006, and
- the usage based component of charges is not lower than 60 per cent by 1 July 2008.

#### *Regulated Rivers*

In New South Wales a two-part tariff is in place for all regulated river system services. Approximately 30 per cent of revenue in regulated systems is derived from the usage component of the two-part tariff. The remaining 70 per cent is derived from the fixed component, based on volume of entitlement.

#### *Unregulated Rivers*

In unregulated rivers, a two-part tariff currently applies for town and industrial customers. Irrigators on unregulated rivers are not yet subject to a two-part tariff, and this situation will continue until a metering and monitoring programme is in place. New South Wales is in the process of rolling-out this programme, with a goal of introducing two-part tariffs for irrigation water on unregulated systems at some time in the future.

The programme, as conducted by the New South Wales Department of Natural Resources, aims to ensure that by June 2008, around two-thirds of the unregulated volume that is extracted within New South Wales will be actively measured. Approximately \$2.9 million has been allocated to this task. Subsequent programs will increase the amount of water being subject to active measurement. In the meantime, however, assessment of use is required for all access licences.

#### *Groundwater*

In groundwater systems a two-part tariff (including a base property charge, a volume of entitlement charge, and a usage charge) applies to highly managed groundwater areas that are metered and monitored. A single tariff (including a base property charge and a volume of entitlement charge) applies to other groundwater areas that are not metered or monitored.

Revenue from usage charges makes up approximately 11 per cent of total revenue from irrigators on groundwater systems. In addition to this, extraction by metropolitan water utilities is charged on a usage basis only.

Throughout New South Wales, the main areas of groundwater extraction (in terms of number of bores, and volume of groundwater extracted) are defined as groundwater management areas.

It is a requirement of most licences (except for basic rights) in a groundwater management area to have a meter fitted at the expense of the licence holder. Across the Murray-Darling Basin, approximately 70 per cent of bores in groundwater management areas are metered. About half of these meters (predominantly within major inland alluvial systems) are read on a regular basis. With the risk management approach taken by New South Wales, over 95 per cent of the groundwater volume extracted is both metered and read. The usage from the remaining bores is small in total and individually, and can be assessed on an annual basis reasonably accurately.

Outside the Murray-Darling Basin, the coastal groundwater systems make up only a small percentage of the total volume of groundwater extracted.

#### *Local Water Utilities*

The following 17 local water utilities abolished their free water allowance and adopted pay-for-use water supply pricing for the 2004–05 financial year: Australian Inland, Balranald, Bogan, Cabonne, Cobar, Central Darling, Corowa, Deniliquin, Gloucester, Griffith, Hay, Murray, Orange, Tumbarumba, Uralla, Wellington and Wentworth.

In addition, the following nine local water utilities abolished their free water allowance and adopted pay-for-use water pricing for the 2005–06 financial year: Carrathool, Cootamundra, Gunnedah, Gwydir, Jerilderie, Liverpool Plains, Wakool, Warren and Young.

As at June 2005, only six local water utilities out of the 86 water supply utilities with over 1000 connected properties still had a free water allowance (none of the seven local water utilities with fewer than 1000 connected properties still had a free water allowance).

The New South Wales Government has indicated that it is continuing to actively encourage best practice pricing (including full cost recovery, consumption-based water pricing where appropriate, appropriate sewerage charging, trade waste charging and commercial developer charges) by all local water utilities. The Department of Energy, Utilities and Sustainability has also issued comprehensive pricing guidelines to all local water utilities together with pricing software. The department will continue to work closely with local water utilities to help them abolish remaining free water allowances and implement pay-for-use water supply pricing by June 2006.

#### Cross-subsidies and Community Service Obligations

There are two components of bulk water costs that are not recovered from extractive users that are funded by government:

- payment of the cost share for non-chargeable water users—these are public good activities that are not attributable to extractive water users, and
- water user subsidy—this is a transitional operating subsidy paid to State Water by the government for that portion of the costs attributable to water users that is not paid by them.

New South Wales interprets the Commission's use of the term community service obligation to refer to the water user subsidy.

At the time of the 2004 National Competition Policy assessment, New South Wales was not publicly reporting the actual community service obligation (i.e. water user subsidy) that it makes to State Water to address revenue shortfalls relating to bulk water supply services. The IPART rural bulk water price determination (IPART, 2001) indicated the level of subsidy (revenue shortfall) on a valley-by-valley basis. It was expected that the level of subsidy would fall between 2001 and 2004. In addition, the revenue shortfall was predicted to fall further during the next price path. In particular, New South Wales advised that the lower bound of cost recovery may not be feasible to achieve in some coastal regulated systems and, as a result, it may continue to subsidise water users' share of attributable costs. New South Wales advised that future State Water community service obligations would be clearly defined, costed and transparently reported in State Water's annual reports.

Currently, wholesale bulk water discounts are available from State Water to irrigation corporations. These discounts are in effect an annual cross-subsidy of \$5.5 million per year from river pumpers to the irrigation corporations, even though not all irrigation corporations receive discounts. To this end, State Water considers the wholesale discounts inappropriate and wishes to eliminate them over the next price path.

IPART's *Bulk Water Prices from 2005–06 Issues Paper* (IPART, 2004) clearly specifies the framework developed for IPART to determine the share of costs attributable to extractive users and the government. The framework identifies legacy cost components that are fully allocated to government. It also identifies forward-looking costs that are shared between both government and extractive users; these costs are based on the 'impactor pays' principle.

In the State Water Corporation IPART Submission 2004 (State Water, 2004) State Water provided information on the range and level of current operating, capital and environmental subsidies. State Water's community service obligation basis is determined by the cost shares set by IPART for elements of the capital programme.

IPART's determination for bulk water clearly specifies the share of costs attributable to users and the level of cost recovery in each water source in each valley. The level of subsidy can be readily derived from this. New South Wales believes this adequately meets the COAG requirement of transparency.

#### Murray-Darling Basin Commission Costs

In its 2001 determination IPART set out the basis on how costs would be allocated between users and the government. This was applied to Murray-Darling Basin Commission costs. This approach was also used in the 2005–06 determination.

For the current review, IPART is examining how the Murray-Darling Basin Commission costs are determined (including River Murray costs) and how they are to be included in the cost base. As well, IPART will be reviewing the cost shares between users and government.

IPART does not envisage the Murray-Darling Basin Commission costs will be separately identified in pricing structures, but instead will be incorporated in the total cost base. It is IPART's intention that these costs will be fully recovered.

## Submissions

Submissions have been received from the New South Wales Irrigators' Council, the WWF-Australia, and the Combined Environmental NGOs. Each of these organisations raised issues directly related to the 2005 National Competition Policy assessment of New South Wales progress in meeting COAG commitments, while others are relevant to the water reform process more generally.

With regard to the 2005 National Competition Policy assessment, the New South Wales Irrigators' Council raised the issue that both State Water and the New South Wales Department of Natural Resources lack transparency in the identification and application of community service obligations.

The submissions received from the WWF-Australia and Combined Environmental NGOs emphasise the importance of moving towards upper bound cost recovery in rural systems. They also note that New South Wales is yet to achieve lower bound cost recovery, and has not put in place a price path for achieving full cost recovery in rural systems. The WWF-Australia largely attributes this to the current reorganisation in the New South Wales bureaucracy.

## Discussion and Assessment

### Cost Recovery - Rural Systems

New South Wales states that a number of rural systems are moving toward cost recovery, but there are also a number of systems that have not yet achieved lower bound pricing. IPART is re-examining the efficient costs and level of cost recovery for those systems which are currently below the lower bound of cost recovery, and it is expected that price paths will be put in place to address this.

In addition, during the course of the review, IPART will consider whether it should target upper bound prices for those valleys that are achieving lower bound prices and, if so, how this can be best achieved.

The most recent State Water submission to IPART has foreshadowed the removal of New South Wales Government subsidies to State Water to assist with recovery of operating expenditures in those valleys where operating expenditures are not fully recovered from water users. While achieving full cost recovery is an important tenet of COAG water

reforms, provisions are made for community service obligations to those regions where full cost recovery would result in unacceptable community outcomes. It is important for governments to fully explain and justify removal of community service obligations.

The Commission considers it critical that price paths recognise the adjustment that moving to lower or upper bound pricing may mean for rural water users in practice. The Commission notes the central role which IPART plays in making the judgements necessary to establish effective price paths.

On the basis of the above information, the Commission considers that New South Wales has made satisfactory progress towards achieving its COAG commitments with respect to full cost recovery for rural systems.

### Cost Recovery – Regional Systems (Local Water Utilities)

Local water utilities in New South Wales are encouraged to apply appropriate pricing as set out in the Best Practice Guidelines. Those local water utilities which do comply with the Guidelines will be moving toward upper bound pricing. For those local water utilities which currently do not comply with best practice, it is expected that they will complete the phasing-in of full cost recovery within three years.

On the basis of the above information, the Commission considers that New South Wales has made some progress towards meeting its COAG commitments with regards to cost recovery for local water utilities.

### Consumption Based Pricing – Rural Systems

In New South Wales a two-part tariff is in place for all regulated river systems. Approximately 30 per cent of revenue in regulated systems is recovered from the variable component of the tariff, and 70 per cent from the fixed component.

Based on the above information, the Commission considers that New South Wales has met its COAG commitments to implement consumption-based pricing in regulated rural systems.

In unregulated rivers, a two-part tariff currently applies for town and industrial customers. Irrigators on unregulated rivers will not be subject to a two-part tariff until unregulated rivers are metered and a monitoring system is in place.

The metering and monitoring programme for unregulated river systems aims to ensure that, by June 2008, about two-thirds of the unregulated volume that is extracted within New South Wales will be actively measured. Subsequent programs will increase the amount of water that is measured.

With the above information, the Commission considers that New South Wales has met its COAG commitment to report on the progress of its staged implementation programme for two-part tariff charging for unregulated river systems.

In the New South Wales sector of the Murray-Darling Basin, 95 per cent of the groundwater volume extracted is metered and read, with a two-part tariff applied to users. Revenue from the usage charge in these regions makes up approximately 11 per cent of total revenue from irrigators using groundwater.

Groundwater systems that are not metered have a single tariff applied. In New South Wales, only five per cent of the groundwater extracted in the Murray-Darling Basin is not metered. These bores are assessed on an annual basis and, it is believed, with reasonable accuracy. Only a small proportion of groundwater, by volume, is extracted outside the Murray-Darling Basin.

On the basis of the above information, the Commission considers that New South Wales has met its COAG commitment to provide adequate information on the extent to which consumption-based pricing is being applied in groundwater systems.

#### Consumption Based Pricing – Regional Systems

In 2004–05 and 2005–06, 26 local water utilities abolished their free water allowances and adopted pay-for-use water supply pricing. As at June 2005, only six local water utilities out of the eighty-six larger water supply utilities (with more than 1000 connected properties) still had a free water allowance. The Department of Energy, Utilities and Sustainability will continue to work closely with these remaining local water utilities to help them abolish their free water allowances and implement pay-for-use water charging by June 2006.

On the basis of the above information, the Commission considers that New South Wales has made satisfactory progress towards meeting its COAG commitments to

demonstrate that regional systems have removed free water allowances, and that regional water businesses have introduced consumption based pricing.

#### Cross-subsidies and Community Service Obligations – Rural and Regional Systems

Wholesale bulk water discounts are currently available from State Water to irrigation corporations. These discounts are in effect a cross-subsidy from river pumpers to the irrigation corporations. To this end, State Water considers the wholesale discounts inappropriate and wishes to eliminate them over the next price path.

On the basis of the above information, and pending the price determination due to be completed by IPART in the first half of 2006, the Commission considers that New South Wales has made some progress towards meeting its COAG commitments to report the level of cross-subsidisation and to phase out these subsidies over the next price path.

New South Wales advised that it may not be feasible to meet the lower bound of cost recovery in some coastal regulated systems and, as a result, that it may continue to subsidise water users' share of attributable costs. While the Commission notes the concerns of the New South Wales Irrigators' Council about the lack of transparency surrounding community service obligations, New South Wales has advised that future State Water community service obligations would be clearly defined, costed and transparently reported in the irrigation corporations' annual reports.

On the basis of the above information, and pending the price determination due to be completed by IPART in the first half of 2006, the Commission considers that New South Wales has made some progress towards meeting its COAG commitment with regard to community service obligations.

#### Murray-Darling Basin Commission Costs

For the current review of prices in New South Wales, IPART is examining how the Murray-Darling Basin Commission costs are determined (including the River Murray costs) and how they are to be included in the cost base. IPART will also be reviewing the cost shares between users and government.

IPART does not envisage that Murray-Darling Basin Commission costs will be separately identified, but rather



that they will be incorporated into the total cost base. It is IPART's intention that these costs will be fully recovered.

If this approach were to form part of the IPART determination and the New South Wales Governments' approach, the Commission considers that New South Wales would not have met its COAG commitment with regard to the public reporting and transparent allocation of costs among users. The Commission will continue to track the IPART determination.

#### 2.4.2 Cost Recovery for Planning and Management

##### Assessment Issues

New South Wales is required to demonstrate that resource management costs are being recovered, consistent with COAG pricing obligations. In particular New South Wales is required to demonstrate:

- that costs associated with activities undertaken for governments are being recovered
- that prices to recover resource management costs are being independently set or reviewed
- the extent to which costs associated with the provision of licenses for water extraction are being recovered
- the extent to which Murray-Darling Basin Commission costs are being recovered
- the extent to which resource management costs are being recovered
- that resource management costs are transparently handled and publicly reported
- that adequate public consultation and education about water management charges has been undertaken, and
- that rural water authorities' resource management costs are being transparently reported.

New South Wales is also required to demonstrate that costs associated with the application, renewal and transfer of licences and transactions on works and use approvals are being recovered consistent with its 1994 COAG obligations for cost recovery, and to report on its cost recovery for other water resource management services.

In New South Wales, water resource management activities are wide ranging and involve all activities associated with managing the water resource. IPART has defined water resource management activities to involve activities such as:

- collecting data to gain a better understanding of the levels of extractions as well as the potential implications of this extraction from the river system—this also includes the activities involved in managing the database
- developing policies to manage the resource, which could involve broader government policy development to manage the interstate sharing of resources
- developing plans and strategies to allocate water amongst users and the environment, and to remediate problems such as salinity or blue green algae, and
- implementing these plans and monitoring compliance against the plans.

Most of these activities are performed by the Department of Natural Resources, while some are performed through the Murray-Darling Basin Commission and the Dumaresq-Barwon Border Rivers Commission.

##### Recovery of Water Resource Management Costs

The Department of Natural Resources, Murray-Darling Basin Commission, and Dumaresq-Barwon Border Rivers Commission incur water resource management costs that are subject to cost recovery through water resource management charges. The costs of other agencies (for example, Catchment Management Authorities) that undertake water resource management are currently very small. Arrangements are expected to be made to recover their costs as well if their water resource management activities increase.

The process for determining the level of water management activity and associated expenditure is primarily determined under a framework of government policy and legislative requirements, including the *Water Management Act 2000* (including water sharing plans), National Water Initiative, Murray-Darling Basin Commission, and interstate programs. In addition, initiatives to address specific water resource management issues are undertaken by the Department of Natural Resources.

All water resource management costs related to bulk water extraction are subject to a proportional system of cost recovery by the Department of Natural Resources. The Department of Natural Resources calculates these costs based on information obtained from its accounting system and costing projections over the price path for the activities concerned. Cost shares are then assigned to each of the costed activities to derive the costs attributable to water users.

In submissions from State Water and the Department of Natural Resources, New South Wales has committed itself to identify all costs associated with the respective functions of these two agencies, including those associated with water planning and management (State Water Corporation, 2005; DNR, 2005).

Currently, the majority of regulated river water resource management costs are recovered through water resource management charges. For unregulated rivers and groundwater, around 35 per cent of costs are recovered through water resource management charges. A framework for IPART to set a full cost recovery price path for the four years 2006–07 to 2010–11 was provided by the Department of Natural Resources in its September 2005 pricing submission.

The Department of Natural Resources' total water resource management costs are currently in the order of \$50 million each year. Of this amount, the Department of Natural Resources' user share of costs is around \$33 million each year, of which \$17 million is recovered through water resource management charges.

Water resource management costs are currently attributed to users primarily on an impactor pays basis. The costs are modelled for single and two-part tariffs to ensure a constant level of cost-recovery, on the basis of assumptions about water use, allocations and entitlements. In the Department of Natural Resources' submission to IPART, it is noted that the costs arising from water resource management are allocated between water users and the New South Wales Government (representing the general community) to determine water resource management charges. IPART has adopted the conceptual approach that all legacy costs—current costs attributable to past activities—are to be borne by government. All non-legacy costs are then allocated

between government and water users on an impactor-pays basis.

Policy development and ministerial and parliamentary services are not currently recovered through the water resource management charge, as consistent with the National Water Initiative.

#### The Role of IPART

IPART determines the maximum prices that may be charged for bulk water services in New South Wales with respect to the costs incurred in providing those services. Bulk water services include both the water resource management and regulatory activities that are undertaken by the Department of Natural Resources, as well as the water delivery services provided by State Water. The prices set by IPART provide for the recovery of a proportion of costs associated with water resource management activities.

IPART's review process is undertaken in a consultative manner—pricing submissions are made available to the public and a public hearing is held. Key stakeholders are advised of the review and have an opportunity to participate.

Water users are assigned their shares of water resource management charges on a valley by valley basis initially, with an adjustment for each user according to the volume of water each one extracts. The apportionment of shares to valleys occurred in 2001, and is being revisited again in 2005, with a determination to be made in June 2006.

#### Licences

Costs associated with the application, renewal and transfer of licences and transactions on works and use approvals are being recovered in a way that is consistent with 1994 COAG commitments for cost recovery.

The Department of Natural Resources annual management charges for its major water utility and irrigation corporation access licences are set on a full cost recovery basis. These charges incorporate costs that are related to both water resource management and water regulation.

### The Murray-Darling Basin and Dumaresq-Barwon Border Rivers Commissions

The Murray-Darling Basin Commission and the Dumaresq-Barwon Border Rivers Commission have responsibility for coordinating and managing water resource management activities from a 'whole of system' perspective for issues that involve more than one state. These include activities such as monitoring water quality, managing groundwater, monitoring bores and developing and implementing salinity mitigation strategies.

New South Wales funding shares are applied to total Murray-Darling Basin Commission expenditures for each water resource management activity to determine the expenditure attributable to each of these activities in New South Wales. These expenditures, together with other (non Murray-Darling Basin Commission) water resource management expenditures incurred by New South Wales, are initially funded by the New South Wales Treasury, and then recovered from water users and government according to cost-sharing ratios set by IPART for the various activities. The resultant aggregate expenditure attributed to water users is then recovered through water resource management charges.

The methodology for allocating water resource management costs to Murray-Darling Basin valleys is developed in the September 2005 Department of Natural Resources pricing submission to IPART. The share of these costs allocated to water users will depend on the water resource management activity concerned, and will be allocated in a manner that is consistent with other water resource management charges.

As users in the Murray River valley may not necessarily be the users who have the greatest impact within the Murray-Darling Basin, the Department of Natural Resources in their submission to IPART proposed that Murray-Darling Basin Commission costs are to be allocated first on a valley-by-valley basis, and second to users within each valley on the basis of the volume of water they extract.

While it is the intention of IPART to fully recover the costs of water resource management in the Murray-Darling Basin, IPART does not envisage that these costs will be separately identified in pricing structures. As such, Murray-Darling Basin Commission costs will be incorporated into the total cost base.

### Submissions

The New South Wales Irrigators' Council indicated in its submission that it wanted the New South Wales Department of Natural Resources to demonstrate that it would not seek to impose on entitlement holders the full cost for the delivery of natural resource management functions that are the legitimate role of government.

### Discussion and Assessment

#### Recovery of Water Resource Management Costs

Currently the prices set by IPART provide for the recovery of a proportion of the costs incurred in water resource management activities. The Department of Natural Resources' total water resource management costs are in the order of \$50 million each year. Of this amount, the Department of Natural Resources' has identified the user share of these costs is around \$33 million each year, of which \$17 million is currently recovered through water resource management charges. The costs arising from water resource management are allocated between water users and the New South Wales Government (representing the general community).

All water resource management costs related to bulk water extraction are subject to cost recovery by the Department of Natural Resources. The resource management costs are recovered through water resource management charges.

On the basis of the above information, the Commission considers that New South Wales has met its COAG commitment to report on how resource management costs are recovered and the extent to which they are being recovered. While the Commission notes the concerns raised by the New South Wales Irrigators' Council, it considers that New South Wales has been transparent in attributing water resource management costs to water users.

The Department of Natural Resources' most recent submission to IPART sets out how it has estimated its resource management costs. These costs relate solely to water resource management activities. Both the Department of Natural Resources and State Water identify all the costs associated with their respective functions, including those associated with water planning and management in their submission to IPART; these submissions are publicly available.

Again the Commission notes the central role of IPART in reviewing these costs and determining, in particular, whether they are justified in light of the efficient levels of service provided by the Department of Natural Resources in managing the states water resources.

On the basis of the above information, the Commission considers that New South Wales has met its COAG commitment to demonstrate that resource management costs are transparently handled and publicly reported.

Nevertheless, because no information was provided on the level of public consultation and education about water resource management charges, the Commission considers that New South Wales has not demonstrated that it has met this element of the assessment.

The costing framework proposed by the Department of Natural Resources and State Water for passing on natural resource management costs is independently reviewed by IPART in a consultative manner. Consultation includes the public availability of pricing submissions and the conduct of a public hearing. Key stakeholders are advised of the review and have an opportunity to participate.

On the basis of the above information, the Commission considers that New South Wales has met its COAG commitment to demonstrate that prices set to recover resource management costs are independently reviewed.

#### Licences

**Costs associated with the administration (for example, application, renewal and transfer) of licences and transactions on works and use approvals are set on the basis of full cost recovery.**

On the basis of this information, the Commission considers that New South Wales has met its COAG commitment to recover costs associated with the provision of licences.

#### Recovery of Murray-Darling Basin Commission Costs

Currently, prices set by IPART recover a significant proportion of both Murray-Darling Basin Commission and resource management costs. The allocation of Murray-Darling Basin Commission and resource management costs between users and the government has been examined and this work will be built on for the IPART 2006 pricing determination. The Commission notes that, while IPART

intends to fully recover the water resource management costs of the Murray-Darling Basin Commission, IPART does not envisage separately identifying these costs. Instead, IPART will add them to the total cost base to be recovered.

As IPART is yet to make its determination for 2006, the Commission considers that New South Wales has not yet demonstrated that it has met its COAG commitment with regard to the recovery of Murray-Darling Basin Commission costs.

### 2.4.3 Investment in New or Refurbished Infrastructure

#### Assessment Issues

The Commission will examine compliance where governments have decided to proceed with a particular project. In conducting its assessment, the Commission will consider:

- the extent to which the economic viability\* and ecological sustainability credentials of infrastructure proposals have been established prior to works commencing
- the environmental assessment processes for all projects, whether publicly or privately funded, and
- the economic viability appraisals of new or refurbished infrastructure proposals only where governments contribute funds.

\* The NCC 2004 NCP Assessment explained the economic viability test as involving consideration of whether a project will deliver an overall public benefit to Australia. Commercial or financial viability is an important element, "a project that is not commercially viable may still satisfy the economic viability test if there is robust evidence that the project will deliver a net social benefit that outweighs the costs of not being commercially viable".

**New South Wales reported that infrastructure development proposals are subject to environmental assessment and approval processes established by the *Environmental Planning and Assessment Act 1979* and the *Water Management Act 2000* (particularly Section 79). Under the *Water Management Act 2000*, a water management work approval is not to be granted unless adequate arrangements are in force to ensure minimal harm to the water source and its dependent ecosystems. Economic viability is a key responsibility of project proponents and it is tested variously through formal Treasury processes, government procurement procedures, budget processes, Cabinet consideration, IPART audit and price determination processes, and other mechanisms.**

New South Wales did not report any major infrastructure developments although it did note that under the Sydney's Metropolitan Water Plan 'there are several proposals for recycling and water supply infrastructure', including the desalination plant proposed for Sydney (discussed below) (DIPNR, 2004f).

On 29 November 2005 IPART released its *Investigation into Water and Wastewater Service Provision in the Greater Sydney Region*. Following the release, the Premier announced that the New South Wales Government would be adopting all the recommendations of the report, including that private companies should be able to apply for access to recycled water for industrial, outdoor and other non-potable uses.

The Commission is aware that a number of local government bodies (including rural water utilities) have been pressing ahead with a range of investments to improve water supplies, either by developing new sources or harnessing water, through methods such as recycling or capture of peak flows.

#### Sydney Desalination Plant Proposal

The Metropolitan Water Plan lists a number of principles for managing Sydney's water supplies. These are to: minimise the risks of water shortages by diversifying sources of supply; ensure secure water supplies; protect and restore river health; adopt a partnership approach with the community; provide good quality, cost-effective water supply services; foster innovation; increase the efficient use of water; match the grade of water to its end use; optimise the use of existing infrastructure; appropriately target future investment; make decisions adaptively; and ensure actions are acceptable to the public, affordable, feasible and sustainable. The plan does not indicate the relative priorities of these principles.

On 23 November 2005 the Premier of New South Wales announced that a desalination plant would be funded by the state, be capable of producing 125 megalitres a day but be 'designed, built, operated and maintained by the private sector'. He also said that 'the recovery of construction and operating costs will be determined by the independent umpire – IPART' (Premier of NSW, 2005).

The desalination plant has been declared as 'critical infrastructure' under the provision of Part 3A of the New South Wales *Environmental Planning and Assessment Act 1979*. The Minister for Planning has given approval to Sydney Water to submit a concept plan that:

- enables environmental assessment, focusing on key issues with the potential to result in significant adverse environmental impacts if not effectively mitigated, during either construction or operation of the desalination plant, and
- assesses the required level of environmental management and monitoring for the proposal.

The Director General of the Department of Planning issued environmental assessment requirements to Sydney Water. These requirements were developed with input from Sydney Water, other New South Wales Government agencies and Sutherland Shire Council.

The outcome of the environmental assessment will be conditions of approval that will guide and direct the design, construction and operation of the desalination plant so that impacts on the environment are avoided or minimised. Sydney Water is committed to complying with the conditions of approval, as will be the consortium selected to undertake the project.

The key issues that are to be addressed in the environmental assessment are:

- energy and greenhouse gas emissions
- terrestrial ecology
- Indigenous heritage
- seawater quality and aquatic ecology associated with intakes and outlets
- aquatic ecology for the bay pipeline
- spoil and traffic management, and
- matters of national environmental significance.

A draft environmental assessment for the desalination plant was available for public comment from 24 November 2005 to 3 February 2006 (Sydney Water, 2005). In addition, community workshops were held in the Sutherland, Marrickville and Rockdale areas during January 2006. New South Wales has also informed the Commission

that an economic cost-benefit analysis of the project will be undertaken in order to determine the most efficient technology, scale and size of the plant.

A NSW parliamentary inquiry into a sustainable water supply for Sydney was established on 1 December 2005. Public submissions were being accepted from 2 December 2005 to 17 February 2006.

The Australian Government determined that the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) was not applicable to the proposed plant. Further, New South Wales was conducting public consultations on the environmental aspect of the proposal, accepting public submissions until 3 February 2006.

On 8 February 2006, the NSW Premier released the Government's updated Metropolitan Plan for Sydney. This plan defers construction of the desal plant at Kurnell until dam levels drop to 30 per cent of capacity. Planning approval is to be completed and a design for the plant is to be purchased by the end of 2005.

## Submissions

The Combined Environmental NGOs expressed concern with the changes to the *Environmental Planning and Assessment Act 1979* that gives the minister power to change assessment and approval arrangements for large-scale developments such as the Shoalhaven transfer project and the proposed desalination plant in Sydney. They were also concerned that these accelerated processes reduce the scope for public analysis and consultation.

## Discussion and Assessment

New South Wales has a range of processes in place to ensure environmental and economic assessments are undertaken for proposed infrastructure projects. However, the Commission considers that the level of public consultation on the proposed Sydney desalination plant has so far been inadequate to engender public confidence that the investment will be demonstrated to be economically viable. Deferral of the decision to construct the plant does not obviate the need to establish its economic viability and ecological sustainability.

Information on the environmental assessment of the desalination plant was made public by the New South Wales Government in November 2005. This assessment contains information on key environmental issues that will assist in the design, construction and operation of the desalination plant. No information has yet been provided on the economic viability of the proposed plant.

On the basis of the above information, the Commission considers that New South Wales has met its COAG commitment with regard to the environmental processes for infrastructure projects. The Commission retains concerns about the public consultation surrounding a project of this significance to Sydney's future water supplies. As no information was provided on the economic viability of the project, the Commission considers that New South Wales has not yet met its commitment to report on the economic viability credentials of the project.

The Commission will maintain a watching brief on the decisions made on the Sydney desalination plant and other proposals for sourcing water for Sydney with regard to the extent to which the economic viability and ecological sustainability of projects is established prior to works commencing.

### 2.4.4 Release of Unallocated Water

#### Assessment Issues

The Commission will look for New South Wales to demonstrate that any releases of unallocated water, including recycled or other sources of water, are occurring in a manner that complies with its COAG water reform obligations. In particular, the Commission will consider whether:

- water plans have increased allocations to consumptive use
- the water required to achieve environmental outcomes is adequately met prior to the release of unallocated water
- the impact on the environment is considered before any new entitlements are issued
- all other avenues for meeting demand have been carefully examined, and
- market-based mechanisms are employed in the release of unallocated water, including recycled water.

In particular, the Commission will consider with respect to the Shoalhaven River proposal, whether:

- adequate consideration has been given to ensuring the water required to achieve the environmental outcomes is adequately met before additional transfers occur, and
- alternative ways of meeting water demands have been fully explored.

#### Planning Aspects

In New South Wales, unallocated water is identified during the development of water sharing plans. In the plan, unallocated water is water that can be made available without prejudicing the environment or existing water users, and refers to the water resource to which the plan relates, rather than recycled or other water. Following assessment in the planning process, unallocated volumes are then specified in the plan, and are subject to the decision-making, consultation and management arrangements of the plan.

Of the 36 gazetted water sharing plans, only the Kulnura Mangrove Mountain, Tomago Tomaree Stockton and Dorrigo Basalt groundwater plans have identified additional water available for release. The New South Wales report indicates that, in these groundwater plans, the percentage of recharge being used compared to the sustainable yield is such that additional extraction would not prejudice the supply to other users or the environment. In all other cases it has been determined that the existing allocations are fully utilising the available resource.

If additional licences are to be issued, current extraction limits for the system must be taken into account.

Catchments within the Murray-Darling Basin are fully developed in terms of extraction capacity, either as determined by the Murray-Darling Basin Ministerial Council Cap, or by the environmental requirements of the catchment. In these circumstances there is no unallocated volume.

One aspect being considered in future surface water plans is increasing allocations through access to high flows, but with a reduction in access to more frequent low flows. This could occur where there is a high level of environmental stress in the low flow range and less in the higher flows. The environment would benefit from such a shift, for example, by introducing a seasonality aspect into allocations. This

process will determine the most environmentally beneficial pattern of extractions while enhancing productivity. An example of this is the granting of higher allocations to town water supplies, to be accessed in higher flows while reducing the town's access to low flows. This is not inconsistent with the National Water Initiative and is practised in other jurisdictions, such as Tasmania.

Under the *Water Management Act 2000*, the minister can declare, by order, that the right to apply for an access licence is to be acquired by auction, tender or other means identified by the minister. While the mechanism for the release of this unallocated water is currently under development, it is anticipated that this mechanism will involve the auction of the right to apply for water. This market-based approach will ensure that water is put to its highest value use. In instances where unallocated water is to be released, a targeted communication programme will be undertaken to ensure that stakeholders are aware of the release.

#### Shoalhaven

Currently, water is moved from the Shoalhaven to Sydney during drought times which can place additional stress on the Shoalhaven system. New South Wales indicate that preliminary studies show that more than 80 gigalitres of extra water each year could be supplied to Sydney by moving water when the Shoalhaven River has higher flows after heavy rain, rather than in dry periods when river flows are low. Under the *Meeting the challenges – Securing Sydney's water future* (also known as the Metropolitan Water Plan) new pipe networks will be built so that the rivers will no longer be used to transfer all the water. New South Wales indicate that this will improve natural ecosystems and reduce riverbank erosion.

The Sydney Catchment Authority is currently examining options for pumping and transferring the water to Sydney's dams. The Metropolitan Water Plan outlines two stages of a development on the Shoalhaven River - Stage one costing \$250 million and involving 50 to 80 gigalitres and Stage two costing \$430 million and involving up to 110 gigalitres. This arrangement would eliminate all transfers along the Wingecarribee and Wollondilly Rivers to Warragamba Dam.

## Discussion and Assessment

**New South Wales' surface water plans are considering increasing the allocation for consumptive purposes through access to high flows, but with a reduction in access to more frequent low flows.**

**The Commission notes that New South Wales is at the stage of considering options for changing the surface water plans to increase allocations to consumptive users.**

**Unallocated water in New South Wales is defined as water that can be made available without prejudicing the environment or existing water users, and refers to the water resource to which the plan relates, rather than recycled or other water.**

**Any new licences that are to be issued in a system with unallocated water must fall within current extraction limits.**

**Water is moved from the Shoalhaven system during times of drought to meet demand in Sydney; but investigations have found that this increases the environmental risk to the Shoalhaven river systems. As such, plans are underway to transfer water in times when the Shoalhaven River has higher flows. New pipe networks will be built and the Warragamba Dam raised to facilitate this.**

**The Commission notes that the Shoalhaven proposal is still being developed and that studies are underway to establish optimum environmental flows. The Commission further notes that, while the proposal would appear to have significant environmental benefits for some rivers, it is not clear at this stage what the impact would be on the Shoalhaven River.**

**On the basis of the above information, the Commission considers that New South Wales has made some progress toward its COAG commitment of adequate consideration being given to environmental outcomes before additional transfers of water occur.**

**The mechanism for the release of unallocated water is currently under development in New South Wales; however, it is anticipated that this mechanism will involve the auction of the right to apply for water. Because the mechanism has not yet been decided upon, the Commission will maintain a watching brief to ensure that New South Wales enables the use of market-based mechanisms.**

## 2.4.5 Environmental Externalities

### Assessment Issues

New South Wales is required to:

- report the extent to which they are identifying and recovering environmental costs through their pricing regimes
- provide evidence that environmental costs imposed on and incurred by water businesses are transparently passed on through prices charged to water users
- where externalities are not included on pricing regimes, demonstrate price paths that will move towards achieving full cost recovery within a reasonable timeframe, and
- where not transparently incorporated into pricing regimes, show that they have identified externalities and, after examination, have concluded that inclusion of an externality in pricing is not feasible or practical.

New South Wales is required to report on how and to what extent externalities are incorporated in pricing arrangements for its water and wastewater businesses. As part of its overall reporting on cost recovery for rural systems and regional water and wastewater services, New South Wales should show that the adoption by local water utilities and the State's rural systems of best practice pricing to achieve the lower bound of cost recovery includes the recovery of externalities.

**IPART metropolitan price determinations place a greater emphasis on usage-based pricing. While it is difficult to isolate environment related operating and capital expenditure from other expenditure, this has been done where possible.**

**In terms of impacts on the environment, IPART considers that its decisions will help increase customers' awareness of the scarcity and value of water, and encourage them to use this resource carefully. In addition, the decisions explicitly take account of capital and operating expenditure associated with meeting environmental licence requirements.**

**There are also specific conditions in the agencies' operating licences which link to the environment and are provided for in prices.**



### Sydney Water

Sydney Water faces significant environmental challenges over the 2005 determination period and beyond, many of which are due to the high forecast population growth in its area of operations.

Of greatest concern is Sydney Water's need to achieve and maintain a balance between supply and demand for water in both the long and short term. In addition, it needs to continue to address sewer overflows during the 2005 determination period.

### Bulk Water

The major water utilities in New South Wales undertaking a bulk water function are licensed by the Department of Natural Resources and are required to pay water resource management costs imposed by the department. The sewerage activities of major water utilities, which are the activities most likely to give rise to externalities, are licensed by the Department of Environment and Conservation. The water utilities are required to pay licence fees to the Department of Environment and Conservation, and are also required to undertake pollution reduction activities agreed with the Department of Environment and Conservation.

All prudent and efficient costs incurred, or expected to be incurred, in meeting environmental commitments and in catchment management are included in the total costs of the agencies and recovered through prices.

### State Water

New South Wales considers all environmental externalities associated with water access to be covered by water management fees levied by State Water.

IPART's 2001 determination also allowed for environmental compliance costs in relation to State Water. These include the costs associated with the installation of fish ladders, and facilities to mitigate thermal pollution and enable environmental flows that mimic natural river flow cycles. IPART concluded that these costs should be shared by extractive users and the government (on behalf of the broader community). For the 2006-07 determination, IPART will consider State Water's proposed capital expenditure in further detail.

### Rural Water Systems

The environmental requirements on all water businesses are, in most cases, imposed through environmental regulation or economic incentives such as pollution charges. The Department of Natural Resources, State Water and the Department of Environment and Conservation all undertake activities associated with managing externalities, the costs of which are recovered from water users.

In its 2005-06 pricing determination for bulk water, IPART stated that it considered the implication of its pricing decisions for the environment (IPART, 2004). It has previously stated its belief that the most effective way to address environmental problems on New South Wales rivers is for the Department of Natural Resources to manage water use within ecologically sustainable river flow regimes. The role of water pricing in this context is to ensure that the Department of Natural Resources has adequate funding to cover relevant water resource management costs.

### Local Water Utilities

As set out in the Best Practice Management of Water Supply and Sewerage: Guidelines, New South Wales local water utilities are being moved towards higher usage charges and lower fixed charges for water supply tariffs (DEUS, 2004). Such pricing better reflects the true opportunity cost of water resources—including externalities.

The externalities of relevance to the local water utilities comprise two elements:

- fees paid by the local water utilities to the Department of Environment and Conservation for sewage treatment works licence fees, along with load based licensing fees and water management fees paid to State Water, and
- externalities required for environmental protection in developing a water supply or sewerage project. Such environmental protection is a condition of development approval.

The costs of both types of externalities need to be recovered by each local water utility through its service pricing.

The Department of Energy, Utilities and Sustainability will continue to work with local water utilities to promote the adoption of best practice pricing.

### The Department of Natural Resources

Many of the costs associated with managing externalities are met through the Department of Natural Resources and passed on to water users as water resource management costs. In the 2001 determination, IPART allowed for total water resource management expenditure of \$41 million (in 2001–02 dollars). For the 2005–06 determination, the Department of Natural Resources has estimated water resource management costs to be \$54 million to \$56 million during the period 2006–07 to 2010–11 (IPART, 2004).

### Department of Environment and Conservation

The Department of Environment and Conservation issues sewage treatment works licences which stipulate the standard of discharge from treatment works to the environment. For a number of years, the licences for treatment works have included pollution reduction programs.

## Discussion and Assessment

### Metropolitan Systems and Bulk Water

The Department of Natural Resources, State Water and the Department of Environment and Conservation all undertake activities associated with managing externalities, and the costs of these activities are recovered from water users.

The sewerage activities of major water utilities, which are the activities most likely to give rise to externalities, are licensed by the Department of Environment and Conservation. The water utilities are required to pay licence fees to the Department, and are also required to undertake pollution reduction activities agreed with the Department of Environment and Conservation.

Where possible, IPART isolates environment related operating and capital expenditure from other expenditure when determining metropolitan water prices.

For environmental externalities related to bulk water, water resource management charges recover the costs associated with the activities aimed at managing these externalities (largely managing ecologically sustainable river flow regimes).

On the basis of the above information, the Commission considers that New South Wales has met its COAG

commitments to report on the extent to which environmental externalities are identified and are incorporated into and recovered through pricing regimes, and that these costs are transparently passed on.

### Rural Systems

For rural systems, New South Wales has reported on the extent to which governments are identifying and recovering environmental costs through their pricing regimes. It is noted that in rural systems, externalities are addressed through resource management costs incurred by the Department of Natural Resources, excluding those related to policy development and ministerial and parliamentary services and passed on to water users through bulk water prices.

On the basis of the above information, the Commission considers that New South Wales has met its COAG commitment with regard to reporting that the recovery of costs by rural water businesses includes the recovery of environmental externality costs.

### Local Water Utilities

The Department of Energy, Utilities and Sustainability will continue to work with local water utilities to promote the adoption of best practice pricing. *The Best Practice Management of Water Supply and Sewerage: Guidelines* include prices reflecting environmental externality costs. The costs of both types of externalities need to be recovered by each local water utility through its service pricing.

On the basis of the above information, the Commission considers that New South Wales has met its COAG commitment to report that the adoption by local water utilities of best practice pricing includes the recovery of externalities.

## 2.4.6 Institutional Reform

### Assessment Issues

#### *Independent price regulation*

New South Wales is required to provide information on the role of economic regulators in setting or reviewing prices, or price setting processes, and the extent to which conflicts of interest are addressed where the water industry regulator and the service provider are responsible to the same Minister.

The Commission is interested in the public reporting and consultation aspects of the independent body's work, as well as its findings in relation to pricing compliance. Where the independent body's role is to review rather than set prices, the Commission will examine the manner in which the results of reviews are addressed by the relevant government, especially where pricing decisions are at variance with pricing recommendations.

#### *Institutional separation*

The Commission will consider:

- the effectiveness of the new institutional arrangements, including the appropriate degree of separation to avoid conflicts of interest, and
- the performance improvements of local government service providers.

#### *Participation in benchmarking processes*

The Commission will look for New South Wales to demonstrate that participation in national processes for inter-agency comparisons and benchmarking, and benchmarking systems managed by WSAA, AWA and ANCID is continuing. New South Wales is also required to demonstrate that there has not been a decline in participation, for metropolitan, non-major urban and rural service providers.

#### *Benchmarking the performance of water authorities – progress with development of a national framework*

New South Wales is required to demonstrate that it has made progress with the development of a national framework for benchmarking of pricing and service quality for metropolitan, non-metropolitan and rural water delivery agencies, including whether appropriate consultation has occurred.

#### *Independent Price Regulation*

**In New South Wales, IPART is the independent economic regulator of the water industry. IPART sets prices for metropolitan water and waste water services provided by Sydney Water, Hunter Water, Gosford and Wyong Councils and for bulk water provided by the Sydney Catchment Authority. IPART also sets prices for rural water systems managed by State Water and for water resource management services provided by the Department of Natural Resources. Determinations are made under the *Independent***

***Pricing and Regulatory Tribunal Act 1992.* The Act provides that IPART sets maximum prices. The relevant portfolio minister is responsible for implementing these prices and may implement a lower price than determined by IPART. However, in these circumstances the minister must seek the agreement of the Treasurer.**

**IPART generally sets medium-term price paths of between three to five years; however, in 2005, IPART set one year determinations for Gosford and Wyong councils, State Water, and the Department of Natural Resources.**

**IPART includes public consultation when undertaking its determinations. Each pricing review involves seeking submissions from the agencies and interested parties and must involve a public hearing.**

#### *Institutional Separation*

**In 2000, New South Wales separated Sydney Water and the Sydney Catchment Authority and, in 2003, State Water was separated from the (former) Department of Land, Water and Conservation. This clearly distinguishes the commercial service provision by State Water from the natural resource regulation role of the Department of Natural Resources, which is responsible for providing water resource management functions.**

**The water resource management services of the Department of Natural Resources are now completely separate from State Water's water delivery services. A service level agreement operates between the two entities. The Department of Natural Resources provides only bulk water resources management services. Non-bulk or treated water services are the responsibility of other agencies such as the Department of Energy, Utilities and Sustainability.**

**State Water has been established as a state owned corporation (under the *State Water Corporation Act 2004*) and has been granted an initial operating licence, which came into effect on 24 June 2005.**

**Water service providers such as Sydney Water, Hunter Water, State Water, local governments and the Sydney Catchment Authority make pricing submissions to IPART.**

## Participation in Benchmarking Processes

### *National Benchmarking Initiatives*

The Gosford Council, the Hunter Water Corporation, the Sydney Catchment Authority and the Sydney Water Corporation are all members of the Water Services Association of Australia, and report statistics in the yearly publication managed by the Water Services Association of Australia.

In addition, of the eight irrigation systems in New South Wales, all report statistics to the Australian National Committee on Irrigation and Drainage, and three of these (Coleambally, Murray River and Murrumbidgee River systems) also participate in more detailed performance reporting managed by the Australian National Council on Irrigation and Drainage.

### *Local Water Utilities*

All New South Wales local water utilities are required to report their water supply and sewerage performance to the Department of Energy, Utilities and Sustainability. The Department of Energy, Utilities and Sustainability collates this information and provides draft data tables of key performance indicators for review by each local water utility. After addressing local water utility comments, the Department of Energy, Utilities and Sustainability finalises the data tables and produces the following reports:

- Performance Monitoring Report
- Benchmarking Report, and
- Triple Bottom Line Report.

The Performance Monitoring Report provides an overall indication of the performance of New South Wales water utilities together with interstate comparisons. The Benchmarking Report discloses the full suite of New South Wales performance indicators and benchmarking data for all New South Wales water utilities, including figures showing the performance of each utility over the last five years. The Triple Bottom Line Report is provided to each utility as an indication of the performance of its water supply and sewerage businesses, including a ranking of its performance relative to both similar sized and all local water utilities. These reports also show utility key performance indicators over the last ten years.

The Performance Monitoring Report and the Benchmarking Report is published on the Department of Energy, Utilities and Sustainability website.

The Department of Energy, Utilities and Sustainability provides an annual copy of these reports to each local water utility for their use in performance monitoring and benchmarking and also provides a copy to IPART. In addition, the Department of Energy, Utilities and Sustainability provide guidelines and management, financial and technical advice to local water utilities to facilitate implementation of best practices. The New South Wales Government has published the *Best Practice Management of Water Supply and Sewerage: Guidelines*, in May 2004, and distributed these to all local water utilities. Local water utilities are now required to comply with the guidelines as a prerequisite for payment of a dividend from their water supply or sewerage businesses and for eligibility for financial assistance towards the capital cost of backlog water supply or sewerage infrastructure.

## Submissions

A submission was received from New South Wales Irrigators' Council, which raised issues regarding the institutional separation of the Department of Natural Resources and State Water. The New South Wales Irrigators' Council is still concerned that the Department of Natural Resources appears reluctant to fully disengage from operational issues and notes the retention of the operation of the state's hydrometric network and a major ownership and operational role with respect to the Water Information Exchange as two areas where the structural separation is incomplete.

## Discussion and Assessment

### *Independent Price Regulation*

New South Wales has addressed its COAG commitments with regard to the role of its economic regulator, IPART, in setting prices and publicly reporting on pricing in major metropolitan water and wastewater delivery agencies and bulk water suppliers. New South Wales has also demonstrated that the roles of water resource management, standard setting and regulatory enforcement and service provision are separated institutionally.

**On the basis of this information, the Commission considers that New South Wales has met its COAG commitment to provide information on the responsibilities of the independent regulator, and the extent to which possible conflicts of interest are addressed.**

#### **Institutional Separation**

**The water resource management services of the New South Wales Department of Natural Resources are now completely separate from State Water's water delivery services. The Department of Natural Resources only provides bulk water resource management services. Non-bulk or treated water services are the responsibility of other agencies such as the Department of Energy, Utilities and Sustainability.**

**This separation distinguishes the commercial service provision by State Water from the natural resource regulation role of the Department of Natural Resources, which is responsible for providing water resource management functions.**

**On the basis of the above information, the Commission considers that New South Wales has met its COAG commitment to provide information on the effectiveness of new institutional arrangements. However, the Commission notes the concerns of the New South Wales Irrigator's Council that some areas remain in which it is unclear that structural separation between State Water and the Department of Natural Resources is completed.**

**The performance of New South Wales local water utilities (including measures of performance improvements) is summarised in the New South Wales 2003–04 *Water Supply and Sewerage Performance Monitoring Report* (DEUS, 2005).**

**On the basis of the above information, the Commission considers that New South Wales has met its COAG commitment to provide information on the performance improvements of local water utilities.**

#### **Benchmarking of Pricing and Service Quality**

**A number of New South Wales water and wastewater businesses and irrigation schemes participate in benchmarking activities through either the Water Services Association of Australia or the Australian National Committee on Irrigation and Drainage. The New South Wales Government also participates in development of a national framework for benchmarking pricing and service quality in the context of implementing the National Water Initiative.**

**New South Wales has provided information about the Department of Energy, Utilities and Sustainability benchmarking report for local water utilities. The Commission is aware that the major urban water delivery agencies are also covered in this report.**

**On the basis of the above information, the Commission considers that New South Wales has met its COAG commitment with regard to benchmarking of pricing and service quality.**

## 2.5 Integrating Water Management for Environmental and Other Public Benefit Outcomes

### 2.5.1 Institutional Arrangements

#### Assessment Issues

Water planning frameworks are to provide for adaptive management of surface water and groundwater systems in order to meet productive, environmental and other public benefit outcomes; to identify the environmental and other public benefit outcomes sought for water systems; and to develop and implement management practices and institutional arrangements that will achieve those outcomes.

To this end, New South Wales has agreed to establish effective and efficient management and institutional arrangements under the National Water Initiative.

For the 2005 National Competition Policy assessment, the Commission is looking for New South Wales to have progressed its implementation of effective and efficient management and institutional arrangements to ensure the achievement of environmental outcomes.

The Commission is also looking for New South Wales to describe the public education and consultation activities undertaken in relation to the integrated management of environmental water.

#### Effective and Efficient Management and Institutional Arrangements

The *Water Management Act 2000* gives priority to the environment in the management of water resources. The Act provides for two types of environmental water. These are rules-based environmental water (planned environmental water) and licence-based environmental water (adaptive environmental water). The water sharing plans contain specific provisions for these two types of environmental water.

Planned environmental water rules are specified in each water sharing plan. This type of environmental water cannot be traded. Examples of rules-based environmental water are environmental contingency allowance rules, transparent or translucent dam release rules, and minimum end of system flow rules.

Planned environmental water is specified in water sharing plans in two ways:

- it is water in excess of the long-term extraction limit established by the plan, and
- it is water that is managed by rules (in the plan) specifically targeting environmental objectives.

The current water sharing plans all establish a long-term extraction limit that determines the bulk share water for the environment and extraction in each water source. These shares are protected by rules in each plan that require water allocations for access licences to be reduced if total extractions exceed the respective long-term extraction limit.

Within groundwater water sources, planned environmental water is ensured through limiting long-term extraction to a proportion of the recharge of each aquifer system, with long-term storage within the aquifer protected for the environment. The long-term extraction limit is maintained by specifying the extraction entitlement of each licence.

Adaptive environmental water is water that is committed by the conditions of water access licences for specified environmental purposes. For example, the licence may be used for the watering of wetlands or simply to provide additional flow to the end of the system. The water access licence contains specific conditions that require the water to be committed for particular environmental purposes, as defined in the relevant water sharing plan.

The organisational arrangements for managing environmental water include the following:

- The Department of Natural Resources is responsible for:
  - developing statewide principles, policies and rules for managing environmental water in consultation with Catchment Management Authorities and other agencies. For example, the department has prepared a draft water recovery and environmental water use policy that is currently undergoing targeted consultation within New South Wales natural resource management agencies (including Catchment Management Authorities)
  - developing a mechanism to provide for the allocation of adaptive environmental water

- coordinating the management of environmental water between catchments and jurisdictions to meet the objectives of joint initiatives, such as The Living Murray Initiative, and
- managing planned environmental water, including managing a ‘growth in use’ process that ensures that the long-term extraction limit is not exceeded and therefore maintains the water set aside for environmental health, and managing water accounts and specifying releases.
- Catchment Management Authorities, locally-driven statutory bodies that report directly to the Minister for Natural Resources, are responsible for:
  - coordinating the development of catchment-wide environmental water management plans
  - managing adaptive environmental water to meet the outcomes specified in environmental water management plans
  - establishing environmental water trusts for the purpose of market-based purchase of water for the environment and investing in improved environmental water management, and
  - managing environmental water trading activities where appropriate. The criteria for trading of adaptive environmental water will be developed and maintained by the Department of Natural Resources in conjunction with the relevant Catchment Management Authority.

A number of Catchment Management Authorities have already recruited staff with expertise in water management to help manage environmental water and develop environmental water management plans. These are generally Catchment Management Authorities in south-western New South Wales that have an immediate role in The Living Murray Initiative.

The Department of Environment and Conservation, and Department of Primary Industries are responsible for providing specialist technical and policy advice on the management of environmental water on wetland and riparian floodplain management; and water use efficiency, floodplain, forest and wetland management, and fisheries management, respectively.

Other features of environmental management that New South Wales considers are significant are discussed below.

#### *Shared Resources between Jurisdictions*

In terms of joint arrangements between jurisdictions, New South Wales is signatory to the:

- Intergovernmental Agreement on Addressing Water Over-allocation and Achieving Environmental Objectives in the Murray-Darling Basin 2004—this agreement is to ensure integrated provision of environmental flows in the Murray River and its tributaries
- Border Rivers Intergovernmental Agreement—this agreement relates to the construction of dams and weirs on parts of the Border Rivers and the sharing of water in those works and rivers between the states
- *Snowy Water Inquiry Outcomes Implementation Deed 2002*—this agreement between the Australian, Victoria and New South Wales governments provides for the integrated management of environmental flows down the Snowy River by implementing the Snowy Water Inquiry outcomes, and
- in February 2004, the Border Catchments Ministerial Forum agreed to a statement of principles as a first step to developing a new intergovernmental agreement for water management in the Border Rivers. The new agreement aims to be consistent with the National Water Initiative and to establish appropriate frameworks for water sharing between the states, environmental water use, water pricing, and interstate trade.

#### *Interconnected Surface Water and Groundwater Systems*

In the case of groundwater and surface water systems that are known to be significantly interconnected, provisions are included in water sharing plans to manage both sources in a combined manner. Where applicable, ‘macro’ water sharing plans will use similar combined management approaches to those in the existing water sharing plans. For highly connected surface water and groundwater systems, the surface water plan and groundwater plan will have some common water sharing rules (such as cease to pump, commence to pump, protection of remnant pools) imposed and managed by the Department of Natural Resources.

### *Audit, Review and Public Reporting Procedures*

The New South Wales Natural Resources Commission provides the New South Wales Government with independent advice on a range of natural resource management issues. In performing this role, the Natural Resources Commission will review progress in achieving the standards and targets in catchment action plans.

The Catchment Management Authorities will monitor water sharing plans for progress in achieving standards and targets in catchment action plans and other issues affecting overall catchment health—including the operation of water sharing plans. Annually, the Catchment Management Authorities will report to the Natural Resources Commission and the Minister for Natural Resources on the achievement of catchment action plan targets and the impacts of water sharing plans on those targets.

The Natural Resources Commission will review the water sharing plans after the first five years of operation and determine the extent to which the water sharing plan provisions contribute to the achievement of standards and targets of catchment action plans. The Natural Resources Commission will then recommend to the minister to either extend the plan or to make a new plan.

### *Environmental Water Trading*

Environmental water held under adaptive licences will be tradeable on the temporary water market, in the same way that all other water access licences are tradeable in accordance with the licence's adaptive environmental water conditions. It will be possible for any individual or organisation to hold adaptive water licences. Criteria will be established to ensure that trading may occur only when the water is not required to meet the environmental object of the commitment.

### *High Conservation Value Rivers, Reaches and Groundwater Areas*

The *Water Management Act 2000* contains provisions for protecting areas of high conservation value. Under subclause 7 (3)(c) of the Act, water sources must be classified 'as to the extent of their conservation value'. New South Wales Government policy specifies that 'macro' water sharing plans must recognise and protect high value environmental assets as a priority.

New South Wales has indicated that the 'macro' planning

process has identified the instream value of all water sources for New South Wales using core ecological indicators that are influenced by streamflow and, potentially, water extraction. All water sources have been classified as having high, medium and low instream value.

Where a 'macro' water sharing plan contains high instream values (that is, high conservation value), management rules are being developed that will protect these values. In unregulated rivers, management rules will ensure that high conservation values are protected from over-extraction and may include flow class management such as strict daily access conditions, water licence embargoes and water trading rules that are designed to protect the identified critical environmental values and ensure minimal harm to the water source.

In groundwater systems, management rules such as local impact rules, conservative sustainable yields, licence embargoes, water trading rules and strict buffer conditions for identified groundwater dependent ecosystems, will ensure minimal harm to the high conservation values identified for the water source.

### *Public Education and Consultation Activities*

New South Wales' 31 statutory water sharing plans were developed through local water management committees, which represented the range of interests. Public consultation also occurred during plan development and gazettal.

By comparison, regional panels have been established to make initial recommendations on the classification and the proposed water sharing rules for all outstanding water sharing plans in New South Wales.

Catchment Management Authorities, which are represented on the panels, will facilitate a two-staged public consultation process, with the first stage focused on consulting with regional stakeholder groups about key elements of the 'macro' water sharing plans. New South Wales has indicated that each group will be invited to provide comment so that the proposed plans are practical and able to be implemented. These initial consultations began in late 2005.

The Catchment Management Authorities will also undertake public consultation during the formal public exhibition of the draft water sharing plans in January and February 2006. Public submissions will be considered by the regional panels in the development of final plans.



## Submissions

The New South Wales Irrigators' Council considers that New South Wales is yet to adopt management practices for environmental water that are transparent, accountable and provide a public record of performance. In its submission, the council also noted its concerns about the measurement and monitoring of environmental programme performance; and the limited communication of water reform benefits, impacts and processes to entitlement holders and communities.

## Discussion and Assessment

New South Wales formally recognises environmental water under the New South Wales *Water Management Act 2000*. The Commission acknowledges that New South Wales is continuing to develop management and institutional arrangements to support implementation of the environmental water provisions under the Act.

The Commission acknowledges that the statewide policies and principles for managing environmental water are being prepared. It is essential that these policies and principles clearly articulate the outstanding details on New South Wales' arrangements for managing environmental water.

The Commission notes that the creation of Catchment Management Authorities in New South Wales and identification of their role in environmental water management represents progress since the 2004 National Competition Policy assessment. Further clarity and experience around the role of the Catchment Management Authorities will be critical to the success of New South Wales' environmental water management arrangements into the future.

The Commission is aware that the New South Wales *Water Management Act 2000* requires that water sharing plans include a series of indicators and targets to measure their environmental performance. The Commission is concerned that performance monitoring programs have not been implemented for the 31 water sharing plans that commenced on 1 July 2004. This is also a concern of the New South Wales' Irrigators' Council. Failing to measure the environmental performance of plans removes the opportunity for adaptively managing environmental

water rules and allocations. It may also undermine the effectiveness of future reviews of plans.

The Commission is seeking further demonstration of New South Wales' commitment to activating this monitoring regime in the recommendations made in Section 2.2.3 on Water Planing and Addressing Overallocated and/ or Overused Systems.

The Commission acknowledges that New South Wales intends to allow the trading of environmental water held under adaptive licences on the temporary water market; however, mechanisms are not currently available to facilitate this. The Commission understands that New South Wales is developing criteria to ensure that trading occurs only when the water is not required to meet the environmental outcomes; however, it is unclear who will be responsible for overseeing this.

On the basis of the above discussion, the Commission considers that New South Wales has made satisfactory progress towards meeting its COAG commitment in this area.

### Public Education and Consultation

Overall, the Commission considers that New South Wales is making satisfactory progress towards meeting its COAG commitment in this area.

The Commission is concerned that New South Wales has not described any existing or planned activities for educating the public about the environmental and other public benefits associated with allocating water to the environment. The Commission also notes the New South Wales Irrigators' Council concern that communication of water reform benefits, impacts and processes to both entitlement holders and the general community has been limited.

## 2.5.2 Water Recovery for Environmental Outcomes

### Assessment Issue

Where it is necessary to recover water to achieve modified environmental and other public benefit outcomes, New South Wales has agreed to adopt the following principles for determining the most effective and efficient mix of water recovery measures:

- Consideration of all available options for water recovery, including investment in more efficient water infrastructure; purchase of water on the market, by tender or other market based mechanisms; investment in more efficient water management practices, including measurement; or investment in behavioural change to reduce urban water consumption
- Assessment of the socio-economic costs and benefits of the most prospective options, including on downstream users, and the implications for wider natural resource management outcomes (eg. impacts on water quality or salinity), and
- Selection of measures primarily on the basis of cost-effectiveness, and with a view to managing socio-economic impacts.

For the 2005 National Competition Policy assessment, the Commission will look for New South Wales to have progressed with the recovery of water to support the objectives of The Living Murray and the implementation of the 'First Step' decision.

The Commission will also consider New South Wales' water recovery efforts under The Living Murray Initiative in terms of their compliance with COAG water recovery principles, and community engagement and consultation.

**New South Wales is participating in The Living Murray Initiative water recovery process. New South Wales has two proposals listed on the Eligible Measures Register:**

- **the Great Darling Anabranch, Poon Boon Lakes and Bungunyah-Koraleigh Pipeline proposal involves construction of more efficient water delivery infrastructure and the return of substantial areas of ephemeral lakes and watercourse to a more natural flow regime. The proposal aims to recover 61 gigalitres of**

**water for \$62 million of investment, and**

- **the Acquisition of Innovative Water Products proposal will aim to recover nine gigalitres of water for \$8.9 million through the development of new market-based water products. The project is building on research funded through Land and Water Australia and will involve buy-back or lease-back arrangements and other derivative products that aim to access water at times when production requirements are low but environmental needs are high. Negotiations with irrigation corporations and trusts are due to commence in late 2005.**

The New South Wales Government decided to undertake the Great Darling Anabranch, Poon Boon Lakes and Bungunyah-Koraleigh Pipeline proposal after extensive investigations. The Great Darling Anabranch Pipeline project was subject to rigorous and public assessment through the environmental impact statement process completed in 2004. The economic and environmental assessment for the Bungunyah-Koraleigh Pipeline is yet to undergo final economic and environmental assessment. This will be completed by June 2006.

Whilst the New South Wales Government has a preference to recover water through the implementation of cost-effective water savings projects, it is also prepared to consider the recovery of water for environmental outcomes through market-based purchase, such as the Acquisition of Innovative Water Products proposal.

The Acquisition of Innovative Water Products proposal will involve the development of market-based instruments, in consultation with irrigation corporations and individual irrigators. This is likely to involve buying water entitlements from willing sellers, as well as developing derivative products that target the availability of water in wet years when environmental watering is most effective.

New South Wales has consulted about individual water recovery measures with individuals, organisations and communities affected by the action. This has ranged from one-on-one negotiations and face-to-face meetings with groups, through to public meetings and formal statutory exhibition of documents for comment.

Some individual stakeholders have been given presentations on water recovery so far, and a round of targeted stakeholder information sessions are scheduled for 2006.

Structured community consultation is also scheduled as part of the development of more detailed asset environmental management plans as part of The Living Murray. Regional natural resource management bodies in Victoria, New South Wales and South Australia have carriage of this process.

More broadly, an information leaflet explaining the roles and responsibilities of New South Wales natural resource agencies in water recovery is in production, and public forums have been held at Mildura and Moama to explain water recovery and environmental water management and application under The Living Murray Initiative agreement.

New South Wales also has several other water recovery projects in development that are designed to support the objectives of The Living Murray Initiative. These include:

- Menindee Lakes structural works
- wetland water recovery along the Murray River
- reduction of losses in channel systems in the Moira and West Corrugan private irrigation areas, and
- investigation of alternative storage at 'The Drop' in the Murray Irrigation area.

### Submissions

The WWF-Australia's submission expresses concerns that the option of purchasing entitlements is increasingly being seen as a last resort water recovery measure. The WWF-Australia believes that the purchase of permanent water entitlements for the environment should be considered as a fair, legitimate and potentially cost-competitive way of recovering water to ensure over-allocation is addressed and environmental outcomes are achieved. With particular reference to New South Wales, the WWF-Australia is also concerned that negotiation is proceeding with various interested parties on the Acquisition of Innovative Water Products proposal without the benefit of public debate or consultation.

### Discussion and Assessment

The Commission understands that all water recovery projects currently proposed by New South Wales under The Living Murray Initiative are subject to cost-benefit analysis and socio-economic impact assessment. Projects are subject to the assessment processes that have been established under The Living Murray Initiative arrangements.

The Commission further understands that all water recovery projects are developed using the best available hydrological models to determine possible impacts on the water users.

The Commission is satisfied that New South Wales has given due regard to COAG water recovery principles when designing the two proposals currently listed on the Eligible Measures Register. The Commission notes that the Acquisition of Innovative Water Products proposal will consider lease-back arrangements for water recovery. This is a temporary water recovery measure, not permanent as referred to in The Living Murray Initiative Business Plan (MDBC, 2005a).

The Commission accepts that New South Wales develops all water recovery projects with the involvement and support of affected landholders and communities. The Commission also acknowledges that New South Wales will conduct targeted stakeholder information sessions on both proposals currently listed in the Eligible Measures Register during 2006. This should address the WWF-Australia's concerns that negotiation on water recovery proposals with various interested parties is proceeding without the benefit of public debate or consultation.

On the basis of the above discussion, the Commission considers that New South Wales is making satisfactory progress towards meeting its COAG commitment in this area.

## 2.6 Water Resource Accounting

### 2.6.1 Benchmarking of Accounting Systems

#### Assessment Issues

The Commission is looking for New South Wales to be actively engaged in the national benchmarking of jurisdictional water accounting systems by June 2005, to allow for the development of a national framework for comparison of water accounting systems to encourage continuous improvement leading to the adoption of best practice.

**New South Wales is involved in a national process to benchmark water accounting systems. Through this process, New South Wales has committed to provide full access to its existing water accounting and entitlement registry systems and to other relevant water databases.**

#### Discussion and Assessment

**The Commission considers that New South Wales is satisfactorily progressing its COAG commitment to benchmark existing water accounting systems.**

### 2.6.2 Consolidated Water Accounts

#### Assessment Issue

New South Wales is to identify situations where close interaction between groundwater aquifers and streamflow exist by the end of 2005, to support the integration of accounting for groundwater and surface water use.

**New South Wales advises that significant interaction between groundwater and surface water sources were identified and mapped in July 2004; however, the extent and rate of interactions are largely ill-defined. New South Wales is working to improve the assessment of connected systems, through the development of process models that will allow predictions to be made on the impact of various groundwater extraction scenarios on streamflows. Coupled groundwater-surface water models will allow for the integrated management and accounting of groundwater and surface water use. New South Wales advises that finalisation and widespread adoption of this approach is a number of years off. The exception is in the Hunter Valley, where an integrated surface water-groundwater management plan is**

**being developed and will be operation from July 2006. This plan will be the model for future plans in connected surface water and groundwater systems.**

**Systems to integrate the accounting of surface water and groundwater can be implemented when the extent of the interaction between surface water and groundwater is determined and groundwater sources are subject to a water sharing plan.**

**New South Wales advises that it has developed and implemented robust water extraction accounting for major regulated river sources. Accounting for remaining surface water and groundwater sources will be completed when water sharing plans for the remaining surface water and groundwater sources are completed.**

#### Discussion and Assessment

**The Commission considers New South Wales has made significant progress toward meeting its COAG commitments under consolidated water accounts.**

### 2.6.3 Environmental Water Accounting

#### Assessment Issue

The Commission is looking for New South Wales to have commenced the development of:

- a compatible register of new and existing environmental water, showing all relevant details of source, location, volume, security, use, environmental outcomes sought, and type; and
- annual reporting arrangements to include reporting on the environmental water rules, whether or not they were activated in a particular year, the extent to which rules were implemented and the overall effectiveness of the use of resources in the context of the environmental and other public benefit outcomes sought and achieved.

**New South Wales plans to record all access licences that have been committed to adaptive environmental purposes on its water entitlement register. Information will include the category of licence, the water source, and the volume allocated to the environment. A management plan, to be developed as a condition of the adaptive environmental water licence condition, will also be available on the register.**

The plan will outline the environmental outcomes sought and how these outcomes will be achieved. Temporary trade in adaptive environmental water will be allowed, in accordance with the management plan. Any trades will be recorded in the adaptive environmental register.

New South Wales is also engaged in the national process to develop and adopt characteristics for compatible environmental water registers and principles for environmental water accounting.

## Discussion and Assessment

The Commission considers that New South Wales is satisfactorily progressing its COAG commitments on environmental water accounting.

### 2.6.4 Reporting

#### Assessment Issue

The Commission expects New South Wales to be engaged in a process to develop national guidelines covering the application, scale, detail and frequency for open reporting, addressing:

- metered water use and associated compliance and enforcement actions;
- trade outcomes;
- environmental water releases and management actions; and
- availability of water access entitlements against the rules for availability and use.

A range of water information, including information on water use, temporary transfers and storage and streamflow data in New South Wales, is publicly available through New South Wales free online registers and information systems. This information is largely restricted to the regulated rivers where detailed metering and monitoring information is available.

Unregulated and groundwater systems will be incorporated into the same reporting system as monitoring becomes more advanced.

New South Wales is currently participating in a national process to develop national water accounting and reporting guidelines that will be applied to its current systems and new systems.

## Discussion and Assessment

The Commission considers that New South Wales is satisfactorily progressing its COAG commitment to develop national guidelines for reporting water use and management information.

### 2.7 Urban Water

#### 2.7.1 Demand Management

##### Assessment Issues

The Commission will assess:

- whether New South Wales has implemented the Water Efficiency Labelling and Standards Scheme, including mandatory labelling and minimum standards for agreed appliances, and are undertaking compliance monitoring; and
- the extent to which the implementation of the Water Efficiency Labelling and Standards Scheme has been actively communicated to consumers.

The Commission will also look for New South Wales to report on progress with the review of water restrictions and the implementation of management responses to supply and discharge system losses.

The New South Wales Parliament passed and proclaimed legislation, the *Water Efficiency Labelling and Standards (New South Wales) Act 2005* in April 2005, enabling New South Wales to participate in the national Water Efficiency Labelling and Standards Scheme. New South Wales also contributes to a special account established under the Water Efficient Labelling and Standards Agreement, which allocates funds for promotion of the Water Efficiency Labelling and Standards Scheme as well as other activities. The Department of Energy, Utilities and Sustainability provides information about the scheme on its website and disseminates information to energy and water stakeholders in its 'Watts and Drops' monthly circular.

The management of supply and discharge losses is focused on the Sydney metropolitan area. Sydney Water's operating licence commenced on 1 July 2005, and it has a leakage standard and specific reporting requirements.

In New South Wales, local water utilities must comply with *Best Practice Management of Water Supply and Sewerage: Guidelines* before they may pay a dividend from their water supply or sewerage businesses. A requirement of the guidelines is that the local water utility must prepare a drought management plan and activate it during water shortages. Under the guidelines, local water utilities are required to undertake an active leakage detection programme and to report annually to government on their water losses.

### Discussion and Assessment

The Commission considers that New South Wales has met its COAG commitments in relation to the Water Efficiency Labelling and Standards Scheme. The review of water restrictions and the implementation of management responses to supply and discharge system losses are ongoing actions.

#### 2.7.2 Innovation and Capacity Building to Create Water Sensitive Australian Cities

##### Assessment Issues

The Commission will assess whether New South Wales has:

- developed and applied national health and environmental guidelines for recycled water and stormwater
- commenced a process to evaluate existing ‘icon’ water sensitive urban developments to identify knowledge gaps and lessons for future strategically located developments, and
- undertaken adequate public consultation and education as part of these.

##### Recycled Water and Stormwater Guidelines

The New South Wales Government is supporting the development of the national water recycling guidelines and is currently developing a regulatory framework for the implementation, management and operation of recycling schemes for multi-unit residential use of recycled water. The New South Wales Government’s Metro Water Plan identifies a range of recycling options for both sewage effluent and stormwater for new development sites.

Pilot projects, such as the Rouse Hill recycling scheme and the Sydney Olympic Park Authority’s recycling programs, offer demonstration and public education opportunities. Guidelines for integrated water cycle management have already been developed that incorporate planning for the whole urban water cycle (water, sewerage and stormwater) into a whole of catchment management approach. Development and implementation of an integrated water cycle management strategy are a requirement of the Best Practice Management Guidelines.

##### Evaluation of ‘Icon’ Water Sensitive Urban Developments

Water sensitive urban design objectives are being implemented through the building sustainability index, which aims to reduce potable water consumption by up to 40 per cent. These requirements already apply to new residential urban developments, and will apply to new multi-unit developments from 1 October 2006 and alterations to residential developments throughout New South Wales from 1 July 2006.

The New South Wales Government has also established the Water Savings Fund, which will provide \$120 million over four years for innovative water conservation and recycling measures.

A major communications and education campaign, ‘Water for Life’, will continue for at least three years to promote changes in attitudes and behaviour among urban water users.

Performance reporting, for both local water utilities and major utilities, is undertaken in accordance with the terms of their licences. The Department of Energy, Utilities and Sustainability has undertaken to evaluate water sensitive urban icon developments.

### Discussion and Assessment

The Commission notes that New South Wales has commenced a process to evaluate existing ‘icon’ water sensitive urban developments. The Commission considers that New South Wales is satisfactorily progressing innovation and capacity building for water sensitive cities.

## 2.8 Community Partnership and Adjustment

### Assessment Issues

The Commission will be examining New South Wales' public consultation and education arrangements for consistency with its COAG obligations, for all aspects of the COAG water reform agenda. Particular assessment items are identified under each relevant section of this assessment framework.

With regard to addressing adjustment issues, the Commission will be looking for New South Wales to demonstrate its commitment to close engagement with affected parties on possible responses, including consideration of, at least, the factors outlined in paragraph 97(i) of the National Water Initiative.

### Public Consultation and Education Arrangements

**New South Wales has consulted publicly on a range of water reform matters. Previous sections of this assessment detail New South Wales' consultation and education initiatives in relation to water resource planning, water pricing, environmental water and urban water. In summary:**

- The initial 31 water sharing plans were developed through local water management committees, which included representatives from the local community and various stakeholder groups with interests in the plans. The plans were placed on public display and public submissions considered in the finalisation of the plans.
- Regional panels have been established to make initial recommendations on the classification and the proposed water sharing rules for remaining water sharing plans that will be developed under the 'macro' planning process. Local Catchment Management Authorities, which are represented on the regional panels, have been tasked to facilitate public consultation on the panel's recommendations.
- The Catchment Management Authorities are also expected to undertake public consultation on the draft water sharing plans during the public exhibition period. Public submissions will be considered by the regional panels in the development of final plans.
- All water sharing plans are to be reviewed by the Natural Resources Commission between the fifth and ninth year

of operation to assess their achievement of the natural resource management standards and targets. The Natural Resources Commission is to call for and consider public submissions and its report is to be made available to ensure transparency in decision-making.

- The costing framework proposed by the Department of Natural Resources and State Water for passing on natural resource management costs is independently reviewed by IPART in a consultative manner. Consultation includes the public availability of pricing submissions and the conduct of a public hearing. Key stakeholders are advised of the review and have an opportunity to participate.
- The Department of Energy, Utilities and Sustainability provides information about the Water Efficiency Labelling and Standards Scheme on its website ([www.deus.nsw.gov.au](http://www.deus.nsw.gov.au)) and disseminates information to energy and water stakeholders in its 'Watts and Drops' monthly circular.
- The New South Wales Government has established a 'Water for Life' initiative to enhance community participation in water management. New South Wales has indicated that this initiative will continue for at least three years to promote changes in attitudes and behaviour among urban water users.

### Adjustment Issues

The major adjustment event has so far concerned entitlement adjustment measures for inland groundwater licence holders. Adjustment measures in the plans varied, but included phasing-in of reduction of entitlements, access to supplementary water, hotspot or local impact management restrictions, and management through available water determinations. A package of financial assistance has been agreed and implementation details are now being negotiated between the New South Wales and Australian governments.

New South Wales reported that reductions in water access for licence holders in the regulated river plans was limited to a maximum of ten per cent through the water sharing plan rules. To help licence holders maximise the use of their water licences, however, New South Wales maintains that a greater range of water trading or water dealing options are now available in these systems.

All irrigators who were affected by the rules in the water sharing plans had access to the Irrigated Agriculture Water Use Efficiency Scheme, funded by the New South Wales Government. This scheme provided financial and technical assistance to irrigators to improve their water use efficiency or to improve their supplies through construction of off-river storages. The Department of Primary Industries provides practical adjustment help to irrigators through training in best practice irrigation management techniques (as part of the 'WaterWise on the Farm' programme) and development assistance through low interest loans issued by the Rural Assistance Authority.

For the 'macro' water sharing plans being developed, New South Wales reported that the classification method will use a matrix of high, medium and low levels of environmental risk and, depending on extraction, the classification will guide the choice of water sharing rules. It also reported that limits will be imposed on the degree of change to water users' access.

## Submissions

The New South Wales Irrigators' Council was critical of the consultative processes for both the development of the groundwater reform programme and the current 'macro' planning processes. In a similar vein the Combined Environmental NGOs were also critical of the consultative processes and the lack of transparency, especially for the new 'macro' planning process.

## Discussion and Assessment

Consistent with its findings in relation to water planning (see Section 2.2.3 on Water Planning and Addressing Currently Overallocated and/ or Overused Systems), the Commission considers that New South Wales has not met its public consultation COAG commitments, particularly with regard to the transparency of the science and socioeconomic analysis underpinning water planning. This issue has also been raised in previous National Competition Policy assessments and submissions.

New South Wales considers that COAG commitments regarding engagement of stakeholders where adjustment is required were partly addressed through a ten per cent limit on the reduction in water access for licence holders in

the development of the first round of water sharing plans for regulated rivers. While the Commission notes that this limited the level of adjustment required, it does not consider that this arbitrary figure has necessarily helped New South Wales and affected water users to deal with significant instances of overallocation.

The Commission notes the considerable consultation on adjustment measures which was undertaken in developing the groundwater water sharing plans that are due to commence in July 2006.

## 2.9 National Water Quality Management Strategy

### Assessment Issues

The Commission is looking for New South Wales to demonstrate continued and active implementation of the National Water Quality Management Strategy (NWQMS). In undertaking this assessment, the Commission will be guided by the expectations identified in the 2001 paper on implementation and the approach taken in previous National Competition Policy assessments. The Commission will consider the extent to which the implementation of other water reforms recognises and gives effect to the National Water Quality Management Strategy. For the 2005 National Competition Policy assessment, the Commission will consider New South Wales' implementation of guidelines that have been finalised since the last assessment.

New South Wales should report on:

- the development of marine water quality objectives
- the review and refinement of water quality monitoring arrangements, and
- the compliance of its non-metropolitan water utilities with the Australian Drinking Water Guidelines.

### Implementation

In 2001 New South Wales agreed to a two yearly review of its implementation of the NWQMS guidelines, and the 2003 National Competition Policy assessment examined New South Wales' progress, consistent with this timeframe.



The 2003 National Competition Policy assessment evaluated New South Wales' application of a broad water quality management framework, and the state was expected to show a consistent and systematic approach to implementing the key elements of the NWQMS. The assessment also looked to New South Wales to have initiated activities that give effect to the strategy where guidelines had been finalised.

Since the 2003 National Competition Policy assessment, the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000* (ANZECC & ARMCANZ, 2000a) have been revised, and the guidelines on biosolids management and sewerage systems overflow have been completed.

The 2003 National Competition Policy assessment found that for the most part, New South Wales was making satisfactory progress in implementing policies that reflect the NWQMS. Since that assessment, New South Wales has continued to implement the key elements of the strategy.

There are a number of activities, in addition to the policies and initiatives outlined in the 2003 National Competition Policy assessment, that are aiding implementation of the strategy in New South Wales. These are outlined below.

Catchment Blueprints, produced for New South Wales catchments in 2002, are being incorporated into catchment action plans by Catchment Management Authorities. Most catchment action plans address water quality problems and set targets for river health outcomes. These issues will now flow on into each Catchment Management Authority's investment strategy.

New South Wales advised that water sharing plans, which provide a sufficient amount of flow set aside for the environment, will lead to improved aquatic ecosystem health and better water quality.

Property Vegetation Plans, which are agreements between government and farmers aimed at maintaining and protecting native vegetation at an on-farm level, also have a component aimed at the improvement of water quality. These plans may help to improve water quality through reducing farm runoff through the maintenance and extension of riparian vegetation.

Building Sustainability Index is a web-based planning tool that measures the potential performance of new

residential dwellings against sustainability indices. Building Sustainability Index ensures each dwelling design meets the New South Wales Government's target of up to 40 per cent reduction in mains potable water consumption. New South Wales considers that urban water savings translate to greater sustainability of supply, more water for the environment, and a flow on effect to improved water quality.

Best Practice Management Guidelines have been prepared and published for New South Wales local water utilities (local government water and sewerage businesses) to encourage further implementation of the strategy by local water utilities.

The Natural Resources Commission is developing a set of statewide targets for natural resource management in New South Wales. A number of these targets will aim to maintain or improve the water quality and ecosystem health of New South Wales' estuarine, coastal and freshwater ecosystems by 2015. Appropriate indicators are currently being selected for use in assessing achievement of these targets.

New South Wales considers its community awareness programs (involving the Department of Natural Resources) to be further evidence that it is implementing the strategy. Programs include Waterwatch, New South Wales Water Bug Survey, and Water Week.

The Metropolitan Water Plan for Sydney outlines a major strategy to improve river water quality in the greater Sydney area. Methods in this plan include improved environmental flows and the promotion of recycling to reduce the nutrient loads entering rivers.

#### Development of Marine Water Quality Objectives

Marine water quality objectives have been developed by the Department of Environment and Conservation. The objectives identify broad goals to achieve the long-term health of New South Wales' coastal and marine waters.

The New South Wales Government agreed to the objectives in May 2005, and plans to release them with or shortly after the Natural Resources Commission's standards and targets, expected early in 2006. Explanatory booklets are expected to be produced for the information of local councils and Catchment Management Authorities.

Guidelines have already been published for Catchment

Management Authorities on how to use existing water quality objectives for freshwaters and estuaries in planning and setting investment priorities. The marine water quality objectives would be considered in the same way.

#### Water Quality Monitoring Arrangements

New South Wales Treasury is conducting a review of water monitoring (both quantity and quality), across all relevant government agencies, with a view to assessing the effectiveness, efficiency and costs of this monitoring and identifying possible areas of duplication.

The Department of Natural Resources is also currently undertaking a review of its water quality monitoring activities, with the aim to make recommendations on the needs for future state water quality and aquatic ecological health assessment programs. Opportunities for identifying which cost-recovery elements of this monitoring are possible from water users are also being examined.

#### Compliance with the Australian Drinking Water Guidelines

The Australian Drinking Water Guidelines (NHMRC & NRMCC, 2004) are applicable to any water intended for drinking, regardless of its source. Compliance of water utilities with these guidelines is monitored by New South Wales Health, with the data maintained on its New South Wales Drinking Water Database.

Each year New South Wales Health provides input into the Department of Energy, Utilities and Sustainability's annual performance comparisons report. This report essentially shows compliance of non-metropolitan water utilities with the Australian Drinking Water Guidelines.

For the 2003 National Competition Policy assessment, New South Wales reported that in 2001–02, ten per cent of non-metropolitan water utilities did not report on their physical compliance with the guidelines, and six per cent did not report on their chemical compliance with the guidelines. At the time, the state government stated that all utilities should carry out and report on the necessary sampling in the future.

For the 2005 National Competition Policy assessment, New South Wales reported that in 2003–04, 12 per cent of non-metropolitan water utilities did not report on their physical compliance with the guidelines, and four per cent did not

report on their chemical compliance with the guidelines.

Over the last five years, microbiological compliance has increased from 97 per cent to 98 per cent while physical and chemical compliances have ranged from 95 per cent to 97 per cent.

#### Discussion and Assessment

As required for this assessment, New South Wales has reported on its progress since the 2003 National Competition Policy assessment, including particular detail on development of marine water quality objectives and the review and refinement of water quality monitoring arrangements. The Commission considers that New South Wales has shown satisfactory progress in implementing policies that reflect the NWQMS.

The Commission is concerned that New South Wales has not demonstrated any linkages between the various strategies it is undertaking currently for implementing the NWQMS, to ensure a consistent approach is maintained.

Furthermore, there remains the issue that not all non-metropolitan water utilities within New South Wales reported on their compliance with the Australian Drinking Water Guidelines for the 2003–04 period. This compliance remains an outstanding concern from the 2003 National Competition Policy assessment.

Overall, the Commission considers that New South Wales is making some progress towards meeting its COAG commitments in this area. The Commission urges New South Wales to address the concerns identified in this assessment, and will continue to monitor progress.

**VICTORIA** 3



## VICTORIA

### 3.1 Implementation

#### Assessment Issues

The Commission is looking for Victoria, as a signatory to the National Water Initiative, to:

- have completed its National Water Initiative Implementation Plan
- where cross-jurisdictional water sharing agreements exist, have commenced a review of existing agreements to ensure their consistency with the National Water Initiative and identify those instances where any new agreements may be required, and
- for Murray-Darling Basin jurisdictions, have commenced a process to review the 1992 Murray-Darling Basin Agreement for consistency with the National Water Initiative.

Victoria provided the Commission with a draft implementation plan in June 2005 and a revised draft in July 2005. This draft was assessed by the Commission and formal comments were provided back to Victoria on how the implementation plan could be improved for it to be considered for accreditation.

At the time of this National Competition Policy assessment, the Commission expects to receive a finalised implementation plan from Victoria in early 2006.

Victoria is currently a signatory to three cross-jurisdictional water sharing arrangements: the 1992 Murray-Darling Basin Agreement (MDBMC, 1992); the Snowy Water Inquiry Outcomes Implementation Deed; and the 1985 Border Groundwaters Agreement with South Australia.

The review process for the 1992 Murray-Darling Basin Agreement had not commenced at the time of this National Competition Policy assessment. Signatories to this agreement include Australian, New South Wales, Victorian, South Australian, Queensland and Australian Capital Territory governments.

In 1958, Victoria reached an agreement with the Australian and New South Wales governments over the management and sharing of water resources of the Snowy Mountains Scheme area. The Snowy Mountains Agreement was extensively reviewed by the signatories of the agreement as part of the process of corporatising the Snowy Mountains Authority in June 2002.

The Premiers of Victoria and South Australia have entered into an agreement to amend the 1985 Border Groundwaters Agreement. These amendments are planned to allow greater flexibility and transparency for more effective management of the shared groundwater resources by specifying permissible annual volumes for different aquifer subzones. The proposed amendments to the agreement were passed by the Victorian Parliament in November 2005.

There is a statutory requirement for a five-year review of the groundwater resources covered by the 1985 Border Groundwaters Agreement. The technical review is almost complete and the management review is underway and is expected to be completed by the end of 2006.

There is a proposal for an agreement to coordinate the management of Murray River groundwater systems that cross the Victorian – New South Wales border. This agreement would be for co-managing shared groundwater resource systems connected underneath the course of the Murray River. To date, there has been an initial exchange of letters on this matter between Victorian and New South Wales ministers. This has been followed by an initial round of discussions between Victorian and New South Wales senior officials. It was agreed that further discussions will be held to develop a common understanding of the issues that require resolution through a formal bilateral co-management agreement between the two jurisdictions and potentially the Murray-Darling Basin Commission.

#### Discussion and Assessment

The timetable for Victoria completing an implementation plan and having it assessed and accredited by the National Water Commission has been revised. Victoria was originally asked to provide a final implementation plan, incorporating the Commission's comments, by September 2005. The Commission is expected to consider plans for accreditation in early 2006.

A review has been undertaken for the Snowy Mountains Agreement and a process has commenced for the 1985 Border Groundwaters Agreement. The Commission notes that there has been no indication yet from Murray-Darling Basin jurisdictions on the timing of the review of the 1992 Murray-Darling Basin Agreement. The Commission notes that Victoria does not seem to have any mechanisms in its water reform framework for identifying areas that could

potentially require a new water sharing agreement between jurisdictions.

The Commission is satisfied that Victoria is progressing implementation of the National Water Initiative (COAG, 2004a), pending completion of a final implementation plan for accreditation by the Commission. The Commission notes Victoria is participating in national processes under the National Water Initiative to carry out water reform activities across jurisdictions and is progressing its internal water reform elements to meet National Water Initiative commitments.

The Commission will continue to monitor Victoria's progress in developing a groundwater management agreement with New South Wales. The Commission also expects Murray-Darling Basin governments to progress the review of the 1992 Murray-Darling Basin Agreement, ensuring consistency with the National Water Initiative.

Overall, the Commission considers that Victoria is making satisfactory progress against its COAG commitments in this area.

## 3.2 Water Access Entitlements and Planning Framework

### 3.2.1 Water Access Entitlements

#### Assessment Issues

The Commission is seeking detailed information from Victoria with regard to the current arrangements for the provision of water access entitlements. The Commission will be looking for Victoria to:

- have completed the conversion of water access entitlements to entitlement systems in line with the principles and timeframes of its 1994 Water Reform Framework commitment. More specifically, to have completed its scheduled mid-2005 conversions and be well advanced toward meeting its mid-2006 timeline for the completion of all conversions, and to demonstrate the consistency of these entitlements with the National Water Initiative access entitlement framework
- demonstrate the commencement of incorporation of the National Water Initiative water access entitlement

requirements into its legislative and administrative regimes. This includes demonstration that it has removed the linkage of water entitlements and land title and restriction on non-landholder entitlement ownership or, if not, indicate when this will occur, consistent with its National Water Initiative commitment, as well as demonstrating that, if this separation has not occurred, in the interim period it has adequate processes and practices in place to ensure water licence and entitlement arrangements will not be a significant barrier to water trading

- have made significant progress in the development of compatible, publicly accessible systems for registering water access entitlements and trades, including recognition of third party interests (such as the interests of financial institutions), and
- report on the public consultation and education processes in place for the introduction or review of entitlement regimes.

The Victorian Government has legislated to establish systems of water entitlements under the provisions of the *Water Act 1989*.

There is a new sustainable water allocation framework, which is detailed in Victoria's *Securing Our Water Future Together – Our Water Our Future* (commonly referred to as *Our Water Our Future*) (DSE, 2004). The legislative regime for this framework will be implemented, and the policies are to be incorporated into Victoria's administrative regime.

#### Bulk Water Entitlements

Currently, bulk entitlements for water define the amount of water in the consumptive pool and contain rules for sharing the available water within the system. Under a bulk entitlement, Victoria also provides water rights to individuals within a water supply area. These rights are open-ended and are tradeable. Additionally, they include bundled-up entitlements to water shares, delivery of water through an irrigation system, and implied entitlements to use water on land.

Bulk water entitlements are issued to urban and rural water authorities in Victoria. They provide a legal right for a water authority to harvest water subject to volumetric limits and flow sharing rules.

Bulk water entitlements held by irrigation water authorities include schedules that specify commitments of the water authorities to supply the water entitlements owned by irrigators.

In regulated systems, bulk entitlements are expressed as a share of the resource. In unregulated systems, bulk entitlements are given a volumetric allocation.

Urban water authorities have an obligation to supply their customers. Domestic customers do not own individual entitlements.

A bulk entitlement is, in some instances, issued to the Minister for the Environment for environmental purposes.

Under the sustainable water allocation framework developed by Victoria, bulk and individual water entitlements for consumptive use will:

- have secure tenure
- aim to provide reliable water supplies
- link the entitlement to a share of the total amount of water available for consumption at any time
- specify the obligations associated with holding the entitlement
- for new entitlements, be allocated by market mechanisms, wherever possible, and
- be allowed to trade between entitlement holders.

Bulk water entitlements cover approximately 80 per cent of consumptive water use in Victoria.

#### Licences

A water licence is required for all commercial and irrigation uses. The use of water for stock and domestic purposes also requires a licence if the water is supplied within an irrigation system or is from a floodway. Licences are not required for stock and domestic water that is supplied from:

- dams that are not on a waterway, or
- groundwater sources (although a bore construction licence is required).

Licences are used to allocate surface and groundwater for commercial and irrigation purposes outside irrigation districts. Licences to divert water are for periods of one to 15 years' duration. Generally, licences in unregulated systems

are for one year; however, on application, the minister must renew the licence unless there are good reasons not to do so. The *Water Act 1989* sets out conditions that may be prescribed in a licence including the protection of a waterway, the purpose for which the water may be used, the protection of the environment, and a range of other matters. Licence conditions specify the volume, rate and time of diversions, and the provision of passing flows (for licensed works on waterways).

Groundwater licences in all areas specify a volumetric limit on extraction.

Sustainable diversion limits (surface water) and permissible volumes (groundwater) specify the maximum volume of entitlements that can be issued from streams within a catchment or from an aquifer. These limits are calculated to provide for the sustainable management of the resource and indicate the upper limit on diversions within a system beyond which there is an unacceptable risk that additional extractions may degrade the environment.

Sustainable water strategies provide the planning framework to identify key water issues and ways to address these issues. These will be developed at a regional level. Specific issues on an unregulated river are generally dealt with through streamflow management plans.

#### Sales Water

Currently, 'sales' water is a low reliability entitlement that is offered to irrigators in regulated systems. They must already hold high reliability entitlements and there must be sufficient water in the system to meet all high reliability entitlements. This additional water is offered only if: (1) there is enough water in the system to meet the high reliability entitlements in the current year, and (2) it is determined that with minimum likely inflows, the high reliability entitlements will be met in the following year.

#### Entitlement Conversion

Consistent with COAG principles, Victoria has converted its bulk entitlements for all systems identified in the 1999 implementation programme, with the exception of Yarra-Tarago (Melbourne) and Bullarook Creek systems. The Melbourne bulk entitlement was expected to be completed by the end of 2005.

*Our Water Our Future* states that there are work plans and management arrangements in place to achieve the timelines to implement new entitlement arrangements, including the full separation of water entitlement from land. Regulated systems in northern Victoria are scheduled to be completed by July 2007, and regulated systems elsewhere in Victoria are to be completed in 2007–08. Nevertheless, the Victorian Government has postponed implementing this reform until 1 July 2007 in northern Victoria due to lack of support from the irrigation community and perceived logistical difficulties.

For unregulated systems, any changes to licence conditions will be made when streamflow management plans are implemented. These plans will be developed to deal with issues of overallocation once a system has been deemed stressed.

The Victorian Government is of the view that, as Victoria has an active temporary and permanent water market, existing water licence and entitlement arrangements have not been a significant barrier to trade.

#### Separation of Entitlement

Currently under *Victoria's Water Act 1989*, although water licences and water entitlements are separate from individual land title, the right to take water remains tied to land. Water rights can be traded by detaching them from the seller's land and then re-attaching them to the buyer's land. This arrangement prevents the leasing of water and severely limits opportunities for more sophisticated water products to develop.

When water rights are converted to water shares, in accordance with the new entitlement arrangements, the water share will be separated from land. There will still be a requirement however, for no more than ten per cent of water rights in each supply system to become untied from land, or owned by a non-water user. This arrangement was agreed to by the Victorian Government as part of the negotiations with the irrigation community, to gain support for the water reforms included in the new *Water (Resource Management) Act 2005*. The irrigation community argued that the arrangement was necessary to reduce the perceived threat that 'water barons' would buy large volumes of water and manipulate the water market.

When the ten per cent limit is reached, which Victoria considers unlikely in the near future, people will not be able to buy water rights unless they can link them to a current water use licence. Similarly, irrigators will not be able to sell their land and keep their water share—they will have to sell both. Victoria expects to review the impact of this trading arrangement no later than 2009.

Furthermore, water users will not be allowed to hold more than twice the volume of water shares permitted under their water use licence. These reforms are discussed further in Section 3.3 on Water Markets and Trading.

In *Our Water Our Future*, the Victorian Government outlines its policy to separate some water access entitlements from land, and for the entitlements to be defined as a share of a water resource pool. Existing water entitlements and licences held by irrigators within regulated water systems will be unbundled to create tradeable water shares, delivery obligations, and water use licences that are consistent with the National Water Initiative.

This process of unbundling of entitlements is provided for in the new *Water (Resource Management) Act 2005*. Implementation of this process was not triggered by proclamation of the new Act in October 2005, but is to be set for individual systems by the minister. Victoria is defining water access entitlements within districts so that individual irrigators, rather than the district as a whole, will have a tradeable share of the water resource. The unbundled, separate component parts will be:

- a legally recognised and secure share of a water resource pool, or a water share
- a specified volume of water delivered to a specified property in a specified timeframe, or a delivery obligation, and
- an entitlement to use water for irrigation on a specified property, or a water use licence.

This commitment for separation of entitlements is consistent with the National Water Initiative entitlement framework requirements. Victoria has amended the *Water Act 1989* to provide legislative arrangements for converting existing entitlements into these unbundled entitlements. The work programme focuses on water entitlements within the large irrigation systems, which will account for 80 per cent to

90 per cent of water used for irrigation in Victoria. The legislation also enables diversion licences for groundwater and unregulated systems to be unbundled in the future. This will occur progressively as overallocation issues are addressed in these systems.

As part of the unbundling process, existing annual sales water allocations will be converted into ongoing, lower reliability water shares. The Victorian Government has indicated that this is aimed at providing greater certainty to irrigators and benefits for the environment. The new sales water package is planned to be implemented in northern Victoria in July 2007.

#### Compatible Registers

Victoria is committed to developing nationally compatible registers for water access entitlements through an intergovernmental working group under the Natural Resource Management Ministerial Council.

Consultation will take place during development of a water register module for interstate water transfer processes. A key strategy for Victoria is to enable the South Australian and New South Wales governments to have online access for approval of interstate transfers.

In the interim, Victoria is developing its own water access entitlements register, for which user requirements have been specified, software has been chosen, and tenders to design the system are being considered. The register is planned to be complete in 2006–07. Compatible registers are also discussed in Section 3.3 on Water Markets and Trading.

#### Consultation and Education

Consultation and education are important elements of the process to develop the water entitlement reforms announced in *Our Water Our Future* and subsequent legislative changes. A steering committee, which included representatives from water authorities, catchment management authorities, government departments and the Victorian Farmers' Federation, helped develop the detailed irrigation reforms included in the *Water (Resource Management) Act 2005*. In addition, an irrigation reference panel, which included chairs of irrigation water service committees, the Victorian Farmers' Federation and the Northern Victorian Irrigators Incorporated, was involved in developing the implementation arrangements.

There have been two rounds of community forums.

During the first round, six community forums were held in December 2004 at locations within the Goulburn–Murray Irrigation District. These forums were well attended and were targeted to maximise the number of farmers in attendance, as they will be most affected by the reforms. During the second round, similar forums were held in Mildura and the Macalister Irrigation District.

The Department of Sustainability and Environment has also briefed other agencies' staff (who have day to day contact with irrigators and have a communication and education role), water authority staff, and Catchment Management Authority board members and staff.

In preparing proposed Victorian legislation for water entitlements, discussions have been held by Victorian officials with New South Wales, Queensland and South Australia to understand the approaches to these matters adopted in each of these jurisdictions. In particular, Victoria is consulting with New South Wales to work towards a broadly consistent framework for water entitlements, including third-party interests (particularly financial institutions). Common language will be adopted where possible.

#### Discussion and Assessment

*Our Water Our Future* includes Victoria's policy approach for incorporating requirements of the National Water Initiative into its water access entitlements legislative and administrative regimes. The legislative arrangements for the policies within this plan have been included in the *Water (Resource Management) Act 2005*. The Commission acknowledges the progress that has been made in translating the policy positions in *Our Water Our Future* into the legislative amendments contained in the new Act.

The Act implements the new sustainable water allocation framework. Once converted and incorporated into the administrative arrangements, water access entitlements in Victoria will be in line with the National Water Initiative.

The change in legislation triggered the immediate implementation of the new water allocation framework; but this process is not planned to be completed until the end of 2008.



For the 2005 National Competition Policy assessment, Victoria had agreed to complete conversions that were scheduled for mid-2005, and be well-advanced towards meeting its mid-2006 timeline for completing all conversions. Victoria has not completed the conversion of all of its bulk water entitlements to entitlement systems in accordance with the timeframes of this commitment.

Despite the amendments made to the *Water Act 1989*, only ten per cent of water shares in a system can be owned by a non-water user. This could represent a barrier to trade by continuing to link water entitlements to land for the remaining 90 per cent of entitlements. This issue is discussed further in Section 3.3 on Water Markets and Trading.

With regard to the development of compatible, publicly accessible systems for registering water access entitlements and trades, including recognition of third-party interests, the Commission acknowledges the work that Victoria is doing to put in place comprehensive registers as part of its implementation of the new water allocation framework. The Commission also notes that Victoria is participating in an intergovernmental forum to develop compatible registers and therefore contributing towards achieving this reform commitment.

Victoria's consultation and education processes for the introduction of its entitlement regime are extensive and robust. The Commission notes that concerns from the community have been taken into consideration during development of the entitlement regime.

The Commission considers that the *Water (Resource Management) Act 2005*, which has provided the necessary legislative arrangements for implementation of the new water entitlement framework, is generally consistent with the National Water Initiative.

### 3.2.2 Environmental and Other Public Benefit Outcomes

#### Assessment Issues

The Commission is looking for the Victorian Government to have commenced the process to incorporate the National Water Initiative architecture for the provision of water for environmental and other public benefit outcomes into its water entitlement, planning and management arrangements.

The integrated planning and management of water for environmental and other public benefit outcomes is provided for under the policy framework of both the Victorian River Health Strategy (DNRE, 2002) and *Our Water Our Future*.

The *Water (Resource Management) Act 2005* provides statutory recognition of environmental water. It establishes an environmental water reserve to set aside a share of water in rivers and aquifers across the state for environmental and other public benefit outcomes. The environmental water reserve will be managed within a broader integrated river restoration programme and will be the responsibility of the Catchment Management Authorities, enhancing their role of managing river health.

The Victorian Government considers that enacting legislation to establish an environmental water reserve will enhance the existing framework and provide arrangements for all entitlements and water use to be fully accounted for and reported.

Sources of water that have secure legal title and that are available to the environment may include:

- water not available for consumption, such as outside sustainable diversion limits<sup>1</sup>, permissible annual volumes<sup>2</sup> and caps<sup>3</sup>
- conditions on consumptive entitlements, such as passing flows and timing

<sup>1</sup> Sustainable diversion limits are the upper limit on diversions within a catchment, beyond which there is an unacceptable risk that additional extractions may degrade the environment.

<sup>2</sup> The permissible annual volume of a groundwater management area is the estimated volume of groundwater that can be extracted on a sustainable basis over the long-term.

<sup>3</sup> A cap is the long-term average volume of water that can be diverted for consumptive use in any river valley.

- environmental entitlements (regulated systems), such as Snowy savings, and
- water shares (equivalent to tradeable entitlements held by farmers), such as sales water.

Water allocated in these ways will be linked together under the environmental water reserve to be established under the *Water (Resource Management) Act 2005*. Where environmental entitlements are established to receive an annual allocation, the reliability would be the same as consumptive entitlements. In addition, the Minister for the Environment may hold water shares for environmental purposes.

In most rivers and aquifers, the environmental water reserve will be provided by limiting the volume of water made available for consumption. In some regulated rivers the environmental water reserve will include an environmental entitlement.

However, with regard to the development of environmental water reserves, the Victorian Government has legislated to make an allowance for existing entitlement holders in overallocated systems. The first environmental water reserves will recognise existing entitlements, and so may not be adequate to achieve environmental outcomes. In these cases, the reserves will require amendment to make them adequate to prevent further degradation of the systems.

Further decisions by Victoria about enhancing environmental water reserves will be made within sustainable water strategies. See Section 3.2.3 on Water Planning and Addressing Currently Overallocated and/ or Overused Systems.

Until the new environmental water reserves have been calculated and implemented for each system, Victoria's provision of water for environmental and other public benefit outcomes remains under the *Water Act 1989*.

The *Water Act 1989* sets out the basis for Victoria's water allocation and entitlement framework. The Act provides for bulk entitlements to be granted to water authorities; these bulk entitlements define the rights of authorities and the basis for sharing water with the environment. The Act also provides for bulk entitlements to be held specifically for environmental purposes and provides the basis for water entitlements to be traded, including environmental water held as access entitlements within a bulk entitlement.

In line with the National Water Initiative, Victoria allows for temporary trading of environmental water, through *Our Water Our Future*. This can occur only where there is a bulk entitlement for the environment held in storage, and where trading does not obstruct the objectives of the environmental water reserve. Conditions for temporary trade of any environmental entitlement will be specified in an operating strategy for the entitlement, which requires the approval of the Minister for Water and Minister for Environment.

Victoria is creating a new lower reliability water entitlement, initially in northern Victoria, by converting current 'sales' allocations into an independent, legally recognised, tradeable entitlement. Around 20 per cent of this new entitlement is to be allocated to the environment.

All the enhancements to the existing management framework outlined in *Our Water Our Future* are intended to be implemented through the *Water (Resource Management) Act 2005* and other subsequent legislative changes.

## Submissions

Environment Victoria and the Australian Conservation Foundation provided a joint submission raising concern over the information provided by the Victorian Government to educate the community during consultation discussions. Specifically, public consultation for the Central Region Sustainable Water Strategy is underway, but the results of the scientific study on environmental flows is not complete. As a result, these two organisations consider that there is a lack of information on the levels at which environmental water reserves should be set.

Environment Victoria and the Australian Conservation Foundation further remark that, in relation to the security of water entitlements, the character and rules governing the use of water entitlements and allocations have been designed to meet irrigator requirements, not the environment.

## Discussion and Assessment

In June 2004, *Our Water Our Future* set out a framework for the future management of water for the environment.

The *Water (Resource Management) Act 2005* provides a statutory basis for implementation of these changes. The Act provides for the establishment of an environmental water reserve for all rivers and aquifers. This reserve is provided through environmental entitlements in regulated systems and the water remaining after consumptive use (which includes conditions on take) in unregulated systems.

The Commission is concerned that the volume of water specified for the environment will not be sufficient to meet all environmental objectives. This is because existing consumptive water use remains the primary consideration in the determination of the reserve volume or allocation when it is initially established. The Commission is concerned also that the process for determining environmental water reserves may not be fully transparent. In view of this, the Commission will continue to monitor Victoria's progress in establishing and enhancing the environmental water reserves. This concern is reinforced by the unease expressed by Environment Victoria and the Australian Conservation Foundation about the inadequacy of the information provided during community consultation. See Section 3.2.3 on Water Planning and Addressing Currently Overallocated and/ or Overused Systems.

The Commission is satisfied that Victoria, through amending its legislation, has commenced the process for incorporating the National Water Initiative architecture for water for environmental and other public benefit outcomes into its arrangements for water.

The Commission considers that, for the purposes of this assessment, Victoria has met its COAG Commitments in this area.

## 3.2.3 Water Planning and Addressing Currently Overallocated and/or Overused Systems

### Assessment Issues

In considering governments' arrangements for allocating water to the environment, in light of guidance provided by the 1994 COAG Water Reform Framework, the ARMCANZ/ ANZECC National Principles and the National Water Initiative, the Commission will expect Victoria to establish arrangements that:

- are based on the best available science and use strategic and applied research (principles 2 and 11)
- achieve a balance between environmental needs and human use that provides the water needed to achieve the environmental outcomes, while recognising, in systems where there are existing users, the existing rights of those users (principles 1, 4, 5, 6 and 9)
- involve monitoring and adaptive management where the regular assessment of ecosystem health guides water management processes (principle 8), and
- involve stakeholder consultation and transparent processes that are robust, and ensure the timely provision of relevant information to all interested parties (principles 7 and 12).

The Commission is looking for Victoria to:

- demonstrate how its water management plans (and related arrangements) address the obligations in the 1994 Water Reform Framework and take account of the ARMCANZ/ ANZECC national principles, regarding the provisions of water to the environment, including demonstrating that its bulk entitlement conversion process is providing adequately for the environment
- provide evidence to demonstrate that its decisions on provisions of water for the environment are made using a multi-disciplinary approach, based on the best available science and robust socioeconomic evidence, and include appropriate community consultation
- demonstrate, if the water allocated for environmental purposes for particular river and groundwater sources is significantly different from that recommended by the best available science, that this decision is based on a robust

examination of the socio-economic evidence and taken in the context of an open and transparent community consultation process that makes explicit the tradeoffs

- demonstrate that an integrated catchment management approach has been adopted for the management of water and that planning processes and administrative arrangements reflect an integrated approach to natural resource management
- demonstrate water allocations in all the river systems and groundwater basins identified in their 1999 implementation programmes is substantially complete, including the finalisation of its flow rehabilitation arrangements for the remaining stressed rivers, in line with its three year Stressed Rivers Programme
- report on progress with the determination of overallocated and/or overused systems not covered by the 1999 implementation programmes and the pathways being developed to address them, and
- provide an overview of the public consultation and education processes in place and adopted for water planning and for addressing overallocated and/or stressed resources.

#### Water Planning

The *Water Act 1989* and subsequent amendments in the *Water (Resource Management) Act 2005* provide the legal basis for Victoria's water planning, allocation and entitlement frameworks, and give effect to the policies regarding the allocation of water resources and water plans to address issues of overallocation.

The commitments of the 1994 COAG Water Reform Framework and the ARMCANZ/ANZECC National Principles for the Provision of Water for Ecosystems are addressed in Victoria through two key framework documents – the Victorian River Health Strategy and *Our Water Our Future*. These documents provide policy direction for the implementation of sustainable water resource management to achieve an efficient and sustainable water industry.

The Victorian River Health Strategy, released in 2002, provides the statewide policy for integrated river restoration and protection within a catchment context. The strategy provides a planning framework for the government, in

consultation with the community, to make decisions on the management and restoration of river systems in Victoria. The long-term aim of the strategy is to integrate principles of ecologically sustainable development into planning and decision making processes.

*Our Water Our Future* provides an integrated approach to the management of Victoria's water resources. It incorporates strategies for water allocation and water resource planning, including the need to address issues of over allocation. The document provides an action plan for management of Victoria's water resources over the next fifty years.

Specifically, *Our Water Our Future* establishes a new sustainable water allocation and entitlement system that is based on a number of policy principles that address key elements of the 1994 Water Reform Framework, including:

- a comprehensive system of water allocations or entitlements
- the formal determination of water allocations or entitlements, including allocations for the environment as a legitimate user of water, and
- an integrated catchment management approach to water resource management.

The main water planning and allocation instruments that provide management arrangements for water resource systems in Victoria are outlined below.

Regional river health strategies (or regional waterway health strategies) have been prepared by Catchment Management Authorities for the rivers in their systems. Regional river health strategies identify priority rivers and river reaches, set targets, and develop integrated river restoration and protection work programmes. They bring together other river-related action plans (such as streamflow management plans, water quality management plans, salinity management plans) and take an integrated catchment management approach to river health.

The regional river health strategies:

- identify environmental, recreational, cultural, social and economic assets for each major river reach, the current condition of assets, and their comparative community value

- identify processes threatening these values and the severity of the risk involved
- identify opportunities for restoration of any degraded values and the requirements for restoration
- identify the broad actions required and set priorities (for example, if flow is a threat, then a streamflow management plan may be required; if the threat is increased incidence of algal blooms, then a nutrient management strategy will be needed), and
- include detailed action plans.

Management priorities identified through regional river health strategies are addressed through regional catchment investment plans. Each Catchment Management Authority is responsible for developing a three-year regional catchment investment plan in consultation with its regional partners and the community. The plan is reviewed annually. This allows the region to put forward the projects that will contribute to the implementation of its regional catchment strategy.

Groundwater resources are managed separately to surface water and have separate environmental water allocations. Water supply protection areas have been declared for highly-allocated and highly-used aquifers. Groundwater management plans are prepared for these areas where allocations exceed 70 per cent of the sustainable yield with the objective of managing groundwater sustainably.

Catchment specific streamflow management plans are developed for high priority unregulated catchments with high demand. These plans provide management rules for licensed diversions and an agreed environmental flow regime. Preparation of these plans involves hydrological studies, environmental studies, metering and consultation. Unregulated rivers comprise most of Victoria's waterways but provide less than ten per cent of the water used.

Approximately 80 per cent of all water used for consumptive purposes in Victoria is covered and managed under water authorities' bulk entitlements in regulated systems. The Victorian environmental flow programme defines and protects existing environmental flows through bulk water entitlement agreements for approximately 450 diversion sites across Victoria. The amount of water allocated for the environment is negotiated with regard to existing water

entitlements for agriculture, industry and domestic use.

Stressed rivers have been identified under the Stressed Rivers Programme, where the applied environmental flows are insufficient to meet environmental objectives and improved environmental flows are needed. Flow rehabilitation plans (or stream restoration plans) were developed to rehabilitate the stressed river systems on a priority basis. These plans may specify options to improve environmental flows where needed and may also specify habitat restoration work required, such as improving instream debris or the provision of fishways. These plans have now been superseded by new arrangements for establishing the environmental water reserve and for adaptive long term water planning outlined in *Our Water Our Future*.

Under the new arrangements, sustainable water strategies are expected to be prepared for five regions across Victoria by 2008. These strategies are the vehicle for making decisions on future enhancements to the environmental water reserve. The first of these was for the central region; a discussion paper was released in October 2005. The sustainable water strategies will identify threats to the supply and quality of water for both environmental and consumptive uses in the region, identify ways to improve water security whilst managing water demand (for example, investing in water supply systems and infrastructure for water recycling and reuse), and identify ways to improve the health of stressed rivers and aquifers. As part of this process, catchment management strategies will inform the priority stressed rivers and environmental flow requirements.

Water authorities are expected to input their requirements to the sustainable water strategy process on the basis of their water supply demand strategy. It is anticipated these demand strategies will be prepared by urban water authorities to identify actions required to maintain an optimum balance between demand management and supply management options available to the authority. Preparation of a demand strategy is a requirement for all urban water authorities across Victoria.

An environmental operating strategy has been developed for the Wimmera–Glenelg catchments and provides the framework for managing the additional water being

recovered through the new pipeline. The environmental operating strategy for the Wimmera–Mallee environmental entitlement defines how the additional water will be split between the two catchments and the flow patterns to meet ecological targets.

In summary, the Victorian Government indicates that it is endeavouring to provide water resources for the purpose of environmental, economic and social values within the state. The key aspects of Victoria's current water allocation framework include:

- reliable entitlements where the volume of entitlements granted relates to the available water in the system
- an allocation system that can adapt to changing conditions and emerging requirements. In effect, entitlements are shares of the available resource, so in a drought there is less water available, and
- overriding powers in the *Water Act 1989* that allow entitlements to be reduced.

Although the system has strengths, the Victorian Government has recognised that there are aspects of water reform that are not fully accounted for in the current framework, these include:

- the legacy of overallocation
- the lack of safeguards to ensure that Victoria does not overallocate in the future
- the lack of clear protection and responsibility for environmental allocations
- the effective management of emerging risks to future inflows and river health, and
- the coverage of all water resources, such as recycled water and stormwater, leading to the suboptimal management of the total resource.

The Victorian Government recognises the need for improvement of the current water management arrangement and an alignment with the objectives of the National Water Initiative. To this end, the government expects to implement a set of reforms to improve Victoria's water allocation system (although the time period for some elements is unclear). The reforms include:

- developing a comprehensive allocation system across all types of water

- allocating a share of the water resource to the environment
- planning for the future with sustainable water strategies
- providing clarity in the ability to vary water entitlements, and
- managing future risks to the total water supply for Victoria.

#### Integrated Catchment Management

Decisions about water allocations are made within the broader framework of regional catchment strategies. Catchment Management Authorities have been formed to facilitate the integration of resource management across these regions. Regional catchment strategies have been prepared by the Victorian Catchment Management Authorities as the primary planning framework for integrated catchment management across Victoria. Regional catchment strategies have gone through a significant process of renewal over the last three years, with nine of the ten strategies accredited. The regional catchment strategies set regional priorities across issues and catchments within a broader natural resource management context and provide the regional context for integrated catchment management and for the management of water and rivers.

Since the 2003 National Competition Policy assessment (NCC, 2003a), Victoria has continued processes for reviewing and implementing regional catchment strategies (each strategy was due to be reviewed five years after the gazettal date). As at December 2005, all ten strategies have been renewed and accredited by both the Victorian and Australian governments.

Victoria's regional catchment strategies are listed below:

- Glenelg-Hopkins was endorsed by the Minister in October 2004
- Goulburn-Broken, West Gippsland and North Central were originally endorsed in 1996 and renewed in 2005
- North East and East Gippsland were endorsed in late 2005
- Corangamite, Port Phillip and Westernport were originally accredited in 1997 and were updated in 2005, and
- Mallee and Wimmera were originally accredited in 1997 and were renewed in 2005.

Twenty four water supply protection areas have been declared in Victoria. These cover catchments where all water resources, including surface and groundwater, are to be managed.

#### Provisions for the Environment

Victoria considers that allocations of water to the environmental water reserve in Victoria are made in line with the ARMCANZ/ANZECC National Principles for the Provision of Water for Ecosystems.

In Victoria, provisions for environmental water are made through Victoria's water allocation framework as a result of the bulk entitlement conversion process (regulated systems) and licensing arrangements (unregulated systems). As mentioned earlier in this chapter, although assessment of the environmental flow requirements of a river system is a major input to decisions regarding provision of water for the environment, it is not the only consideration.

In 2002, the Victorian Government established a method entitled 'FLOWS' for assessing the environmental water requirements of rivers and streams in Victoria, updating the previous assessment methods. FLOWS is used primarily for streamflow management plans, bulk entitlement conversions, and determining environmental flow requirements for stressed rivers as inputs to sustainable water strategies. It was designed to assess the water requirements for the instream environment and overbank flows; it is not applicable to watering regimes for particularly large wetlands or the specific water requirements of estuaries.

The community consultation component of the FLOWS method provides social input to the decision making process through the establishment of a reference committee. The committee provides input on ecological objectives and local information.

*Our Water Our Future* includes a commitment to establish an environmental water reserve for all rivers. The environmental water reserve is a share of water set aside for the environment; it has similar statutory recognition as other consumptive entitlements. Further to discussions in Section 3.2.2 on Environmental and Other Public Benefit Outcomes, the initial environmental water reserves to be provided under the new *Water (Resource Management) Act*

*2005* will recognise existing entitlements for systems that are fully allocated or overallocated. Victoria acknowledges that in some overallocated systems, the reserves may be inadequate to achieve satisfactory environmental water requirements and it may enhance the entitlements in the future. *Our Water Our Future* provides for water recovery projects where required to enhance environmental water reserves.

*Our Water Our Future* outlines programmes to provide environmental water reserves in eight large regulated rivers across Victoria, namely the Wimmera, Glenelg, Goulburn, Broken, Thomson, Macalister, Loddon and Campaspe systems.

The Victorian approach for providing water for the environment is to set clear ecological objectives that are intended to be achieved by the provision of environmental flows and complementary restoration works. Victoria has stated that it is monitoring against these objectives and if it finds that the provision of water for the environment is not achieving the desired ecological outcomes over a relevant timeframe, further action will be taken to meet those objectives. Victoria states this will be considered through the sustainable water strategies and 15-year resource assessments.

The Department of Sustainability and Environment has entered into a research partnership with the new eWater Cooperative Research Centre to investigate ecological responses to environmental flows.

Stage 1 of this monitoring project has been completed and involved the development of a statewide framework for monitoring responses to the new environmental water reserves, which Victoria considers is consistent with the national framework. Victoria is of the view that the resulting Victorian Environmental Flows Monitoring and Assessment Program is a consistent, scientifically defensible framework that provides guidelines for developing hypothesis-based monitoring programmes (Cottingham et al, 2005).

Stage 2 of this project is underway currently and involves the eWater Cooperative Research Centre, in conjunction with the relevant Catchment Management Authorities, in developing individual monitoring programmes to detect responses to the new environmental water reserves in

eight regulated rivers. The results of these monitoring programmes are planned to be used to improve decision making on the provision and use of water for the environment.

Groundwater management areas have been identified where there is intensive use and where good quality groundwater resources have been identified. For each groundwater management area, a permissible annual volume has been determined, which is the volume available for allocation. Victoria states that this is aimed at ensuring the long-term sustainability of the resource.

Groundwater management plans have been approved for eight water supply protection areas, which have been declared for highly allocated and highly used aquifers. Victoria claims that under these management plans, an environmental water reserve is provided through limiting the number of allocations in a plan area and placing restrictions on extractions when required.

The other areas—which are neither groundwater management areas nor water supply protection areas—are referred to as unincorporated areas. Victoria considers that the state's unincorporated areas are mostly in the forested and national park areas, or in other areas of the state where water quality is poor or aquifer yields are low.

#### Flow Rehabilitation Arrangements

Victoria is progressing its bulk entitlement conversion process along with other water reform activities. When complete, the conversion process will result in a total of 193 sets of existing rights being converted into surface water bulk water entitlements. For the 2004 National Competition Policy assessment (NCC, 2004b), Victoria reported completion of 142 individual conversions, grouped under 17 supply system aggregations. For the 2005 assessment, Victoria has advised that as of 1 Jan 2006, 179 bulk entitlements conversions have now been completed, with 14 conversions remaining to be finalised. These are grouped under a revised aggregation of 19 supply systems, of which 14 have been completed. Victoria states that approximately 93 per cent of the state's total water resources are now covered by flow sharing arrangements.

For groundwater systems, the 2004 National Competition Policy assessment recognised that groundwater

management plans had been completed for nine groundwater supply protection areas. Since that time one plan (Katunga) has become the subject of legal action and depending on the outcome of that process, may need to be revised. Another plan (Koo-Wee-Rup Dalmore) is undergoing a review. The Koo-Wee-Rup Dalmore plan was the first groundwater plan developed in Victoria and has been in place for over 20 years. Furthermore, a permissible annual volume has been declared in an additional 36 groundwater management areas.

#### Regulated Systems - Stressed Rivers Program

Victoria established a three-year Stressed Rivers Program to complete, by mid-2005, flow rehabilitation plans for each of the 11 stressed river systems identified in its 1999 implementation programme.

At the time of this 2005 National Competition Policy assessment, flow rehabilitation plans, or alternative management arrangements where relevant, have been implemented in all 11 systems that were identified in Victoria's 1999 implementation programme.

An update on each system identified as stressed in 1999 is provided below. For the purpose of assessing Victoria's approach to incorporating the 1994 COAG Water Reform Framework and the ARMCANZ/ANZECC National Principles for the Provision of Water for Ecosystems into its management arrangements, the Commission looked at the Broken River and the Wimmera and Glenelg Rivers in detail for this 2005 National Competition Policy assessment.

#### *Thomson and Macalister Rivers*

For the 2004 National Competition Policy assessment, Victoria reported that the bulk entitlement conversion process for the Thomson and Macalister Rivers was finalised in 2001. On the basis of recommendations from the Thomson Macalister Environmental Flows Task Force, the bulk entitlement for the environment was modified in *Our Water Our Future* as part of the implementation of the flow rehabilitation plan. Modified bulk entitlements for environmental flows for the Thomson system were gazetted in August 2005.

As the Thomson and Macalister systems are fully allocated, the initial environmental water reserves were set by capping the consumption of water in each of these catchments.



*Our Water Our Future* contains specific actions to enhance the environmental water reserve in both the Thomson and Macalister Rivers.

Additional water savings are planned for the Thomson and Macalister systems as a result of the Macalister Irrigation District channel automation project.

Responsibility for managing, monitoring and assessing the adequacy of increased environmental flows lies with the West Gippsland Catchment Management Authority. The Authority, in partnership with the Department of Sustainability and Environment, prepared the environmental operating strategy for the Thomson and Macalister Environmental Water Reserves. The strategy was endorsed in November 2005.

A ten-year monitoring programme has been implemented to monitor change in a wide range of variables including vegetation, physical form, fish, aquatic macro-invertebrates and water quality. This is part of the statewide Environmental Flows Monitoring and Assessment Program.

A community monitoring programme (Waterwatch) is also in place, with a plan to make available to the community a number of fact sheets on environmental flows in the Thomson–Macalister system.

#### *Maribyrnong River*

At the time of the 2003 National Competition Policy assessment, although Victoria had completed the flow rehabilitation plan for the Maribyrnong River, it considered that its implementation would not be cost-effective compared with the environmental benefits achieved. Victoria referred the Maribyrnong River plan to the Port Phillip and Westernport Catchment Management Authority to incorporate into the regional catchment strategy and river health planning processes. The 2004 National Competition Policy assessment recognised that Victoria had completed plans for rehabilitating flows in the Maribyrnong River.

Melbourne Water now has the responsibility for implementation of the flow rehabilitation plan for the Maribyrnong River, in accordance with regional priorities established through its regional river health strategy. The strategy is currently being updated with comments provided by the community and key stakeholders during the public consultation period for this document.

The FLOWS method is being used to more accurately determine the environmental water requirements of the Maribyrnong River as an input to the streamflow management plan review process. Consultation and discussion of the appropriate trade-offs between consumptive and environmental uses will occur throughout the stream flow management plan and the central sustainable water strategy processes.

The health of the Maribyrnong River is being monitored through the second Index of Stream Condition benchmarking exercise, the Victorian Water Quality and Quantity Monitoring Network, and community monitoring through the Waterwatch Victoria programme.

The condition and works programme for the Maribyrnong River will be reviewed every five years through the Port Phillip and Westernport Regional River Health Strategy.

#### *Lerderderg River*

As recognised in the 2004 National Competition Policy assessment, Victoria has completed the flow rehabilitation plan for the Lerderderg River.

Environmental flow provisions for the Lerderderg River were enhanced after the physical modification of the Lerderderg Weir was completed in July 2004. A series of hydraulic tests were subsequently undertaken to ensure that the modified weir could pass the additional environmental flows.

The Bulk Entitlement (Werribee System – Irrigation) Conversion Amendment Order, gazetted on 27 January 2005, amended the original bulk entitlement to allow the water authority to provide environmental flows that meet environmental water requirements.

#### *Badgers Creek*

The 2004 National Competition Policy assessment recognised that Victoria had completed the flow rehabilitation plan for Badgers Creek.

Flow issues in Badgers Creek will be addressed when the Healesville water supply is finalised. Flows in Badgers Creek are reduced by diversions by Melbourne Water for urban water supplies.

### *Avoca River*

As noted in the 2004 National Competition Policy assessment, Victoria decided that a flow rehabilitation plan for the Avoca River was not required. This decision followed the findings of a 2002 Sinclair Knight Mertz environmental flow assessment of the Avoca River, which established that the recommended environmental flows at that time were being met.

As the Avoca River was not considered to be a stressed river, it is likely to be managed using statewide or regional management rules. The Avoca River is expected to receive an additional 1500 megalitres per year from water savings gained through the construction of the Wimmera–Mallee pipeline.

### *Broken River*

The Broken Basin Bulk Entitlement Project Group appointed a scientific panel (convened by the Cooperative Research Centre for Freshwater Ecology) to consider environmental issues and to provide independent advice on the opportunities that exist through the bulk entitlement conversion process to better protect and enhance existing environmental values associated with regulated waterways in the Broken River Basin. The scientific panel report of 2001 included a number of environmental flow recommendations for the Broken River and Broken Creek systems (Cottingham et al, 2001).

Environmental flow recommendations were developed (but not implemented) for the Broken River, while management recommendations were developed and implemented for the Broken Creek. This recognised the fact that the current flow regime in Broken Creek would remain largely unnatural and that there was insufficient hydrological and hydraulic data available to quantify environmental flow requirements.

The use of Broken Creek as a water supply channel and as a receiver of irrigation drainage and channel outfalls means that what was once an intermittently flowing stream is now a perennial stream. Any detailed environmental flow regime would be an artificial construct for much of Broken Creek. The exception is for the section of Broken Creek between Waggarandall Weir and Katamatite. This section of the creek still retains some measure of ephemerality, which will be enhanced should the proposed pipeline for the Casey's Weir and Major Creek Waterworks District go ahead.

Flow rules were recommended to protect or enhance the current environmental values associated with the Broken River. Given that existing knowledge of the ecology of the Broken River was limited, these recommendations were considered as part of an adaptive management experiment, where the delivery of flows and any ecological responses are monitored and assessed. This was proposed to lead to the optimisation of environmental flow releases in the future.

The recommendations mostly focused on minimum flows and rates of rise and fall in the flow regime. The scientific panel recognised the potential ecological impact of higher than normal summer flows down the Broken River, but felt there was insufficient information to recommend maximum flows. The bulk entitlement process provided for all the environmental flow recommendations.

As advised in the 2004 National Competition Policy assessment, Victoria has recommended that additional flows are necessary to meet environmental flow requirements in the Broken River. These will be provided through the water savings from decommissioning Lake Mokoan (as outlined in *Our Water Our Future*) as well as those provided by the bulk entitlement conversion process. As such, the Victorian Government will not prepare a Flow Rehabilitation Plan for the Broken River. The bulk entitlement conversion process for the Broken River has been completed.

Victoria has indicated that, since the 2004 National Competition Policy assessment, the Goulburn Broken Regional River Health Strategy was completed and submitted for endorsement to the relevant Victorian minister. At the time of the 2005 National Competition Policy assessment, the strategy is awaiting approval.

### *Wimmera and Glenelg Rivers*

Victoria has stated that the bulk entitlement conversion process for the Wimmera and Glenelg rivers was completed in June 2004. A bulk entitlement of 34,690 megalitres has been provided for the environment in these systems, of which 3220 megalitres is held in storage. This has been provided through water savings arising from the Northern Mallee pipeline. The remaining environmental allocation is provided as 'run of river' flows, provided through a cap on consumptive use.

The approval for the Wimmera Mallee Pipeline Project was announced on 24 June 2005.

The Wimmera Mallee Pipeline Project is to be delivered by the regional water authority, Grampians Wimmera Mallee Water. It is anticipated to convert 16,000 kilometres of inefficient open channels to a pipeline system that will reticulate water to about 10,000 rural properties and 40 towns. It is a ten year project. The project aims to:

- save 103 gigalitres of water that is currently lost through seepage and evaporation in the existing Wimmera Mallee channels
- provide more reliable, better quality water supply to farms, towns and businesses in the region, and
- restore environmental flows to five major river systems (including the Glenelg and Wimmera rivers).

Victoria has indicated that water savings from the Wimmera Mallee pipeline will eventually provide an estimated 83 gigalitres of water that it plans to allocate to the environment. This water is in addition to the existing bulk entitlement for the environment from water savings from the Northern Mallee pipeline.

The environmental water reserve for the Wimmera–Glenelg system will be managed in accordance with the environmental operating strategy. This strategy defines how Victoria plans to split the water between the two catchments and the flow patterns needed to meet key ecological targets.

The Glenelg Hopkins Regional River Health Strategy was completed in 2004 (Glenelg–Hopkins CMA 2004). This strategy sets the priorities for the future health and management of the waterways in the region for the next five years. The Glenelg–Hopkins Catchment Management Authority, in cooperation with the Wimmera Catchment Management Authority and the Department of Sustainability and Environment is responsible for maximising the effectiveness of all environmental water reserves across the region and identifying where environmental flows are inadequate and need to be improved. The strategy includes a range of targets and performance objectives related to flows.

A number of reports have been commissioned that form the scientific basis to the determination of environmental flow requirements in the Wimmera and Glenelg rivers.

Environmental flows in the Wimmera River were released as ‘freshes’, separated by a constant baseflow, between early December 2004 and mid-February 2005. The objectives of environmental flows in the Wimmera River over the 2004–05 spring and summer period were aimed at restoring water quality within pools along the river. Consequently, the monitoring programme focused on the weekly measurement of surface water quality and observations of river levels and the inundation of in-channel features, at 26 sites along the MacKenzie and Wimmera rivers. A significant reduction in salinity levels has been observed in some pools, and is considered to be a positive outcome of the releases.

A monitoring programme is being implemented for monitoring the effects of the environmental flow regime in the Wimmera–Glenelg river systems, involving the CRC for Freshwater Ecology, Sinclair Knight Mertz, the Department of Sustainability and Environment and the Wimmera and Glenelg–Hopkins Catchment Management Authorities (Sharpe & Quinn, 2004).

#### *Snowy River*

The Snowy Rescue Plan is a cooperative project between the Victorian, New South Wales and Australian governments. It is envisaged that this plan will return 21 per cent of the flow (212 gigalitres) to the river over ten years.

Three water saving projects have been completed for this system so far, namely the Normanville Pipeline Project (saving 3.6 gigalitres), Woorinen Pipeline Project (saving 1.5 gigalitres) and Goulburn–Murray Irrigation District Domestic and Stock Metering Project (saving 16.4 gigalitres). In addition to the 21.5 gigalitres saved in these projects, the carryover of more than five gigalitres of water savings achieved last season makes up the remainder of the 26.6 gigalitres.

These projects represent Victoria’s contribution to achieve the 28 June 2005 milestone target of 57 gigalitres of increased environmental flows in the Snowy River. These water savings have been generated and transferred to bulk entitlements for the environment.

A number of restoration programmes have also been completed to complement environmental flow provisions and maximise integrated river health outcomes. The bulk entitlement conversion process has been completed and provides water for the environment. Victoria states that the target volume of 57,000 megalitres was reached.

### *Loddon River*

The bulk entitlement conversion for the Loddon River system has been completed and was gazetted in November 2005.

The bulk entitlement for the environment includes an allocation of 2 gigalitres for the watering needs of priority wetlands associated with the Loddon River.

Victoria has stated that it has completed modelling of the impact of providing the recommended environmental flows on security of supply. The results of the modelling showed that there are impacts on the reliability of supply, but Victoria considers these impacts to be acceptable.

Additional water for the environment is expected to be provided through water savings from the Wimmera Mallee pipeline. An average of 3–4 gigalitres per year is planned to be supplied to the Loddon system from the Western Waranga Channel, to provide higher winter baseflows and some spring freshes.

The Loddon River may also benefit, as a conduit, from environmental water provided for the Murray icon sites allocated from 20 per cent of irrigation sales water as part of Victoria's commitment to The Living Murray Initiative.

It is intended that statewide management rules be used to allocate water in all sections of the Loddon system where other water management plans are not in place.

### Unregulated Systems - Stream Flow Management Plans

As outlined in *Our Water Our Future*, the Victorian Government plans to establish an environmental water reserve for all unregulated rivers.

In most cases, this is expected to be achieved through better management of existing diversions, as opposed to allocating a specific environmental entitlement, by:

- introducing interim basin caps on licences
- banning the issuing of new licences which allow diversion of water during the period November to June inclusive, and adopting new management rules for this period
- issuing new licences for only the July to October period where there is spare water under the sustainable diversion limit for the catchment, and
- introducing statewide management rules for licensees who take their water in summer. The aim is to protect the environmental water reserve.

If an unregulated river is stressed, of high community value, and of high state priority, the Victorian Government will require the development of a streamflow management plan. Streamflow management plans are developed to identify objectives and actions for achieving sustainable environmental water reserves. Streamflow management plans are also expected to clarify reliability of supply for water users and include rules for rostering, trading and the granting of any new licences.

Over the next ten years, the Victorian Government expects to provide environmental water reserves in 21 priority unregulated rivers through the development of streamflow management plans and other licensing management rules.

Where the Victorian Government seeks to provide an environmental water reserve in a shorter timeframe, it plans to subsidise farmers for on-ground works to accelerate implementation of a streamflow management plan.

For the 2004 National Competition Policy assessment, Victoria had completed two streamflow management plans, for Diamond and Hoddles Creeks. These plans were developed using the 'In-stream Flow Incremental Methodology' approach to determine environmental water requirements, which, although accepted at the time, are no longer regarded as the best scientific approach.

Since then, Victoria has progressed development of streamflow management plans for the Plenty River, Olinda Creek, Stringybark Creek and Pauls, Steels and Dixon Creeks.

### *King Parrot Creek*

The King Parrot Creek Action Plan was completed in 2004 and provides a plan to complement the expected increase in environmental flows and ensure that the environmental benefits of increased flows are maximised and provide integrated river health outcomes.

The first stage of implementing the King Parrot Creek Action Plan was undertaken as part of the project: Targeted Action and Building Community Confidence in Riparian Programs. Further action on finalising and implementing the King Parrot Creek Streamflow Management Plan is subject to the finalisation of revised streamflow management planning guidelines and the development and trialling of various approaches to achieving recommended environmental flows.

### Public Consultation and Education

There are a number of avenues through which community consultation and associated education processes for catchment and water management occur in Victoria.

In preparation for *Our Water Our Future*, there was extensive community consultation as part of Victoria's green paper, regarding water allocation in stressed rivers. This process was reported on in the 2004 National Competition Policy assessment and was found to be suitable.

Decisions about environmental water reserves are negotiated through consultation with stakeholders in recognition of increasing demands for consumptive uses of water. This is part of the new sustainable water allocation framework for long-term water resource planning.

Community consultation for individual systems, regarding bulk entitlement conversion and the streamflow management plans under the FLOWS methodology, occurs through a community reference committee and a project steering committee that represents key individuals, groups and authorities relevant to the project area.

For regional river health strategies, the Victorian Government considers community consultation a major component to the development and implementation of regional plans. Victoria states that communities are involved in setting priorities and agreed targets for the environmental condition of rivers in their catchment.

In addition to consultation activities, the 2004 National Competition Policy Assessment looked at various specific education campaigns, including the *Our Water Our Future* education campaign, Waterwatch Victoria and the Vic Water education site. These were found to be appropriate educational tools. In addition to these ongoing programmes, other education programmes have been established by Victoria. These include:

- **Run of the River**—an education programme to inform the community about overallocated and stressed water resources. It was established by Waterwatch Victoria, in partnership with the Department of Sustainability and Environment
- **Victorian Water Resources Data Warehouse**—an Internet site dedicated to disseminating up-to-date information on Victoria's water resources.

The site gives the public access to raw and summary data on both water quality and quantity throughout Victoria and is a central repository for published documents produced from this data, and

- The Department of Sustainability and Environment's Water website—launched in July 2005, the new water website provides the public with up-to-date information on current Victorian policy and programmes that address water planning and overallocated and stressed systems.

### Submissions

Environment Victoria and the Australian Conservation Foundation provided a joint submission on the water planning activities being carried out under Victoria's *Our Water Our Future*. They raise concerns on the following points:

- there is an apparent lack of community education on the effects on the environment of water authorities fully utilising their bulk entitlements
- consumptive use in rivers that are already stressed, or at risk of stress, should be capped at current use and water should be recovered for environmental flows to redress overallocation
- there is a lack of public accountability on environmental water managers and Catchment Management Authorities. This may be further complicated by the possible conflicts of interests of Catchment Management Authority boards that are dominated by irrigator representatives making decisions on trading of environmental water, and
- neither sustainable water strategies nor The Living Murray Initiative have clear timelines or targets for addressing overallocation and over use in Victorian river systems. *Our Water Our Future* provided for the conversion of 'sales' water into an entitlement to the environment, as part of Victoria's contribution to the Living Murray environmental allocation, by 1 July 2005, but this was not implemented.

## Discussion and Assessment

The *Water (Resource Management) Act 2005* provides for the recognition of river regulation and consumptive use as potentially impacting on ecological values. The suite of management plans developed in Victoria include provisions for meeting the water regime necessary to sustain ecological values of aquatic ecosystems whilst recognising the existing rights of other water uses, and further allocation of water for any use on the basis that ecological processes and values are sustained.

Accountabilities in all aspects of management of environmental water are transparent and for the most part are clearly defined. Catchment Management Authorities are responsible for the day to day management of environmental water provisions, however the licensing arrangements are managed by the Victorian Government.

Monitoring regimes through the Victorian planning process, including Sustainable Water Strategies, inform the adequacy of environmental water and provides for an adaptive management framework.

In light of this, the Commission is satisfied that Victoria's water management arrangements are generally in line with the ARM/CANZ/ANZECC National Principles for the Provision of Water for Ecosystems.

### Water Planning

Victoria's 1999 implementation programme identified the priority overallocated and/or stressed river and groundwater systems for which the Victorian Government undertook to develop arrangements for the allocation and trading of water, including to the environment. These commitments have been reiterated in the National Water Initiative. The year 2007 is now the deadline for completing water plans for any additional river or groundwater system that was not originally identified in 1999, and that is overallocated, fully allocated, or approaching full allocation. The year 2009 is the deadline for completing plans for any other systems that are not approaching full allocation.

Concerns have been raised over the slippage or lack of clarity about Victoria's schedule for implementing new water resource management arrangements in its overallocated and stressed systems. The Commission notes that timetables set

out in *Our Water Our Future*, such as for the conversion of 'sales' water as part of Victoria's contribution to The Living Murray Initiative by July 2005, have not always been met.

The Commission is satisfied that Victoria has processes and strategies in place for carrying out water management planning across the state that are in line with its commitment under the 1994 COAG Water Reform Framework and have legislative backing. Nevertheless, consistent with the comments above, the Commission has concerns over the timing of addressing overallocation in stressed systems.

A broader concern is that Victoria is still bedding down the architecture of its water planning, and that this planning is yet to address some genuinely difficult environmental and other allocation problems, and that in the meantime, this may mean a lack of clarity and accountability in addressing these problems with on-the-ground outcomes, in a timely manner.

The success of the sustainable water strategy process and outcomes is critical, in the Commission's view, as a focal point for Victoria's water planning and management efforts, and to providing greater confidence about when and how environmental water reserves will be enhanced to adequately provide the allocations required for ecological outcomes.

### Integrated Catchment Management

As previous assessment reports have recognised, the Victorian water allocation and planning framework is comprehensive and provides for the identification of surface and groundwater flow requirements, the integration of these requirements within a catchment planning and management process, and the engagement of the community in decision making.

Nevertheless, the Commission is concerned over a number of issues that have arisen from a review of the current framework, relevant to this assessment.

The integration of surface and groundwater planning and allocation processes is yet to be fully realised. In the absence of such integration there is the potential for continued or new overallocation, competition between water sources, and a reduction in security of supply of surface and groundwater environmental water allocations.

The regional river health strategies include comprehensive community engagement processes and they identify priorities and targets for action. Still unclear, is the process for incorporating the outcomes of the consultation on the strategies into the management of existing environmental flow regimes, and the process for informing the management of additional flows made available from water savings. This is reflected in the concerns of Environment Victoria and the Australian Conservation Foundation that decisions on trades of environmental water made by Catchment Management Authorities could be perceived as unfairly benefiting irrigators. The ownership of the environmental water reserve is with the Crown, but the operational management of the reserve and the agencies who control the reserve are not clearly identified.

It is unclear whether the environmental operating strategy identified for managing the additional water made available from the Wimmera–Mallee pipeline is a one-off strategy or a new process to be implemented for the sharing arrangements in areas such as the Wimmera–Glenelg. This again raises broader concerns surrounding the complexity of the Victorian planning arrangements, and implications for clear lines of accountability in making plans and strategies operational.

#### Provisions for the Environment

The Commission notes that previous National Competition Policy assessments have raised concerns regarding Victoria's approach to allocating appropriate water to the environment, both in terms of the implementation of environmental flow provisions and the process and information employed in determining appropriate provisions for the environment.

A desktop analysis of the FLOWS process suggests that it substantially meets the range of elements identified in previous National Competition Policy assessments as those that could be considered to encompass best available science.

Flows takes a multidisciplinary approach, involving a range of scientists and water quality specialists and uses best available data that are subject to quality control and quality assurance arrangements.

The FLOWS methodology considers the water regime, broadly including season and duration, cease-to-flow, low flows, freshes, high flows, bank-full flows and overbank flows. It addresses surface water and floodplains, but does not address estuaries, groundwater, or large wetlands.

The Commission is concerned, however, that some aspects of the FLOWS process lack transparency. It is not apparent whether FLOWS considers human use constraints in its determinations. The extent of peer review of the recommended flow regime is also not clear. Furthermore, it is not evident whether FLOWS includes an ongoing monitoring phase that targets key ecological and physical performance indicators tied to adaptive management.

Further to discussions in Section 3.2.2 on Environmental and Other Public Benefit Outcomes, the Commission is concerned that in catchments that are highly developed, not enough water for environmental outcomes is provided, and is unlikely to be provided for some considerable time. Against this, the Commission acknowledges that:

- some water is being recovered for the environment in high priority catchments
- the bulk entitlement conversion process makes some provisions for environmental water, and
- Victoria's Stressed River Program has initiatives already in place to better provide for the health of these systems.

The Commission reiterates its view about the importance of the sustainable water strategies to take stock of current actions and clearly map future actions to address water provisions for the environment.

Victoria's schedule for converting the rights of water authorities to bulk entitlements, which include conditions for providing flows for environmental purposes, shows that the process is not scheduled for completion until 2008.

#### Flow Rehabilitation Arrangements

##### *Regulated Systems – Stressed Rivers Program*

Victoria has completed flow rehabilitation plans or equivalent flow management arrangements for the 11 stressed, regulated systems identified in the 1999 implementation programme.

Under the Victorian Environmental Flows Monitoring and Assessment Program, unique monitoring programmes will be developed and implemented for the eight major regulated systems in the state. The Commission is satisfied that, if implemented straight away, the results of this monitoring will improve future decision making for environmental objectives set in management plans and encourage adaptive management. It is unclear what monitoring is taking place for unregulated surface water or for groundwater bores.

In reviewing Victoria's approach to water management and determination of environmental flow arrangements, the Broken River and Wimmera and Glenelg Rivers were considered as models for activities across the state. The Commission examined water planning for these systems based on publicly available information in order to test the transparency of Victoria's processes and outcomes.

#### *Wimmera and Glenelg Rivers*

The bulk entitlement process for the Wimmera–Glenelg was completed in June 2004. Assessing this against the criteria for best available science requires a detailed examination of the reports that underpinned the final bulk entitlement allocation. These were not readily available publicly.

There is concern that the volume of water available under the bulk entitlement for this system is unclear. The Victorian Government has mentioned a number of volumes (32 gigalitres Headworks, 34 gigalitres North Mallee pipeline savings, eight gigalitres Wimmera–Mallee pipeline, ten gigalitres of savings to new consumptive uses, and elsewhere a figure of an additional 83 gigalitres from the pipeline savings to the environment), but the full bulk entitlement is not clearly defined.

From the publicly available information, it appears that the bulk of water savings from the pipeline projects will be allocated to the Wimmera–Glenelg environmental bulk entitlement, with ten gigalitres going to new consumptive uses. On the basis of publicly available material and the Commission's own assessment of the Wimmera Mallee Pipeline project (in the context of project funding under the Water Smart Australia programme (NWC, 2005b)), the Commission is satisfied that the social and economic assessments used in determining the trade-offs between consumptive and environmental use were complete.

#### *Broken River*

Victoria has provided an overview of progress in the Broken River water allocation process, but more detail than is available publicly is required to evaluate how much has been achieved.

The Broken River bulk entitlement process involved independent scientific expertise and the intent of providing water for environmental flows using best available science. The potential geomorphological and ecological effects of higher-than-natural summer flows is an area that requires additional research (Stewardson and Cottingham, 2002).

Victoria has described the processes around decommissioning Lake Mokoan, which have been substantial and involved considerable community engagement. However based on publicly available documents it is not clear how much of the 44 gigalitres of savings from decommissioning Lake Mokoan will be made available to environmental flows and the process for determining the flow regime for this water.

#### *Unregulated Systems – Stream Flow Management Plans*

For the 2005 National Competition Policy assessment, Victoria was to have finalised the King Parrot Creek Streamflow Management Plan, including the determination of appropriate environmental flows in the creek. In addition to this, the effect of trade-offs between the environment and the rights of existing users were to be explained. Victoria has not met its COAG commitment in this area.

The Commission will continue to track Victoria's progress in addressing unregulated systems, and expects Victoria to stand by its commitment of implementing 21 stream flow management plans over the next ten years.

Overall, the Commission considers that the processes used for water assessment and planning across Victoria, in both regulated and unregulated systems, has employed the best available science. The Commission notes that there is no one method used for dealing with water resource management in catchments in Victoria, and the existing framework of management plans and strategies is quite complex and confusing.



### Public Consultation and Education

The Commission considers that the consultation processes undertaken and currently underway as a result of *Our Water Our Future* are appropriate.

The Commission is satisfied that the consultation and education processes undertaken in Victoria are transparent and robust. In the Commission's view Victoria does take into consideration the issues raised during these processes when determining provisions for the management of water.

### 3.2.4 Assigning Risks for Changes in Allocation

#### Assessment Issues

The Commission expects Victoria to demonstrate that it has a process and timetable in place to integrate the risk assignment framework into its legislative and administrative water entitlement and planning regimes, and to have applied the framework for any changes in allocations that have not been provided for in its current water plan overallocation pathways.

Within Victoria, the amount of water available in any particular year is defined by a set of access rules about inflows, storage capacity, release capacity and obligations to provide passing flows and volumetric limits, together with rules about how to calculate the seasonal allocations for entitlement holders.

These rules are contained in bulk entitlements in regulated systems. In the case of diversions from groundwater and unregulated surface water systems, licence conditions enable rostering and other restrictions to be imposed and environmental flows to be passed.

The available water resources in any year are thus shared between consumption and the environment.

The Victorian Government's policy for assigning risks of changes in water available in the consumptive pool is set out in *Our Water Our Future*. The Victorian Government's *Water (Resource Management) Act 2005* provides for a two-step process. Firstly, in the twelfth year of a 15-year cycle, a technical resource assessment identifies whether:

- the resource base has suffered a decline, and whether it has fallen disproportionately on the environment or water users, and

- river health is deteriorating for flow related reasons.

Secondly, if a long-term decline is detected and the effects have been felt disproportionately, all entitlements may be adjusted to ensure that the effects of the long-term decline has not fallen disproportionately on any user.

The long-term average share of water allocated to consumptive use and to the environment by these rules is calculated on the basis of the available streamflow and climate data (which in the larger northern Victoria systems is in excess of 100 years of records).

The *Water (Resource Management) Act 2005* requires the Minister for Water to establish an open, consultative review of the balance between the water available for consumption and the environmental water reserve, and of necessary corrective action. The government will be able to undertake corrective action and make permanent adjustments to entitlements as a result of this process without necessarily providing compensation. Permanent adjustments to entitlements on account of long-term changes to inflows or river health will be considered only if the adjustment is a recommendation from an expert assessment and consultative review, and if adjustments are made no more frequently than once in 15 years.

Where there is a long-term change to inflows due to natural events such as climate change or bushfires, the relative shares of the resource may be amended for the environment and consumptive use without compensation.

If river health is deteriorating due to changes in flows, the government will decide at the time if there is to be any compensation for adjustment of entitlement.

This approach was agreed with stakeholders as part of the 'sales deal' negotiations, which will see the allocation of 20 per cent of new sales entitlements to the environment and the parcel of measures to assist farmers in releasing the sales water.

Victoria will participate in a three-year study, in collaboration with other jurisdictions, to improve understanding and predictability of key climate parameters for specific regions over a range of time scales. This research will be used to develop triggers that indicate when an adjustment to water entitlements is needed in response to long-term climate change or bushfire.

### Implementation Timetable

Victoria has provided the following timetable for implementation of its risk assignment framework:

- amend legislation so that sustainable water strategies are the recognised regional scale natural resource (water) management plans in the planning framework—from mid-2005 to mid-2006, and
- prepare sustainable water strategies along the lines of the characteristics and components at Schedule E (of the National Water Initiative) based on the following priorities:
  - Central Region and Northern Region—from mid-2005 to the end of 2008
  - Wimmera–Glenelg, Gippsland and South West regions—from 2007 to the end of 2009.

### Discussion and Assessment

Victoria has demonstrated that it has a process and timetable in place to integrate a risk assignment framework into its legislative and administrative water entitlement and planning regimes.

In adopting the approach to risk assignment as outlined above, Victoria is not applying the risk assignment framework set out in the National Water Initiative but, by adopting Clause 51, will apply its own approach to sharing risk. A jurisdiction can apply its own risk assignment framework if it can show that there is agreement between all affected parties and there is an acceptance of the alternative.

The level of consultation undertaken in the development of this framework appears satisfactory in the context of developing *Our Water Our Future*.

Victoria has not demonstrated any instances where it has had to apply the framework for any changes in allocations that have not been provided for in its current water plan overallocation pathways.

There is a further adjustment issue arising from Indigenous access in already fully allocated systems, as Indigenous allocations are incorporated within entitlements for the environment. This is discussed further in Section 3.2.5 on Indigenous Access.

The Commission is satisfied that Victoria has met its COAG commitments for the risk assignment framework section of the 2005 National Competition Policy assessment. The Commission will continue to monitor Victoria's progress to ensure that its actions for risk assignment remain in line with the National Water Initiative, particularly for stakeholder consultation and acceptance of Victoria's framework.

## 3.2.5 Indigenous Access

### Assessment Issues

The Commission is looking for Victoria to show that it has in place arrangements for the incorporation of Indigenous water issues into water planning processes, including the recognition of the possible existence of native title rights to water.

Since 2000, it has been the practice of the Victorian Government, through the Department of Sustainability and Environment and its predecessors, to invite all affected Indigenous groups to participate in bulk entitlement consultative processes. The objective has been to ensure that bulk entitlement orders facilitate the provision of water to the rivers and the floodplains in a way that ensures continuation of Indigenous practices.

Victorian water planning processes have included the above requirement to ensure an appropriate response if and when the need arises.

As yet, there has been no native title awarded in Victoria. There are currently 11 country claims and nine specific claims that have been registered within Victoria but are yet to be determined. There is, however, one native title consent order currently before the Federal Court involving the Wotjobaluk people around the Wimmera River, north of Dimboola.

Within this order, there is no provision relating to the allocation of water under native title provision for traditional cultural purposes. In the event that water is legally allocated to native title holders for traditional purposes, it will be accounted for within the relevant Victorian water account.

## Discussion and Assessment

The current practice is to ensure that bulk entitlement orders facilitate the provision of water to the rivers and the floodplains in a way that ensures continuation of Indigenous practices and requirement to consult with Indigenous communities. Where identified, Indigenous allocations are incorporated within entitlements allocated for the environment.

There is lack of clarity, however, as to how additional Indigenous allocations are provided for in already fully allocated systems where this inclusion may necessitate adjustment to other entitlements. The National Water Commission assumes this will be undertaken with processes developed to address expansion of the Environmental Water Reserve where necessary.

The Commission is satisfied that Victoria has adequate arrangements in place for the incorporation of Indigenous water issues into water planning processes, including the recognition of the possible existence of native title rights to water.

### 3.2.6 Interception

#### Assessment Issues

The Commission will look for Victoria to provide information on the steps being taken to implement water interception measures detailed in the National Water Initiative, including any application of the National Water Initiative provisions to recent activities.

The Victorian Government has been progressively bringing activities that may intercept water into the state's statutory water allocation framework. Priority was given to commercial and irrigation extractions from surface water and groundwater sources, as these were recognised as being the most significant interception activities. As is consistent with the National Water Initiative, Victoria also recognises the need to account for and manage the impacts of significant changes in interception resulting from landuse change in the water allocation framework.

#### Interception by Farm Dams and Bores

In the case of groundwater, all bores for irrigation and commercial uses require a water licence. Bores for stock and domestic purposes do not require water licences, but they do require bore construction licences.

In the case of surface water, the *Water Act 1989* requires all diversions of overland flow for irrigation and commercial use to be licensed and regulated, and all dams on waterways to be licensed. These licensing provisions were extended in 2002 to all overland flow harvested in farm dams of any size for commercial and irrigation uses. Dams used for stock and domestic purposes require a construction licence if higher than five metres and greater than 50 megalitres capacity, but they do not require a water licence.

Currently, diversion licences on regulated rivers are metered. A programme has been underway to install meters on licences for both diversions from unregulated rivers and from groundwater in water supply protection areas.

A condition on newly issued licences is that a meter be installed.

In addition, the Victorian Government states it intends to install meters on all surface water diversion licences in excess of ten megalitres and all groundwater licences in excess of 20 megalitres.

Five Victorian licensing authorities are responsible for taking action where people illegally take water or illegally construct dams. The installation of water meters is expected to increase compliance efforts.

All licensed diversions are included in Victoria's allocation and planning framework. Estimates of water used in unlicensed stock and domestic dams are included in the state's water accounts and hydrologic modelling.

#### Interception Resulting from Landuse Change

The government has commenced a statewide assessment to identify the level of hydrologic impact (defined as high, medium and low) of new forestry plantations and other significant landuse changes in various areas. The risk of significant interception impact will be based on information about the water use of different landuse types and the likelihood of future landuse change. This information will identify areas where water resources are most at risk from landuse change.

The initial focus is on the potential impacts of new timber plantations as they have one of the highest impacts on water use per unit area. However, the Victorian Government acknowledges that other landuse changes also need to be considered. Tools will be developed that allow the exploration of trade-offs and associated social and economic impacts of landuse change on environmental values across a catchment.

Regionally determined thresholds for landuse change will be developed, taking into account the environmental impact analysis and other social and economic factors. Appropriate tools such as planning provisions, incentives and pricing systems will then be developed to account for and manage the impact of new plantations and other significant landuse changes on water resources.

The method will be developed and applied in the West Gippsland area as a pilot, and subsequently refined and extended to the rest of the state, starting with high priority areas as determined by the impact zone analysis.

The information generated in the course of this project should ultimately allow the inclusion of a landuse change component in the state water accounts.

### Discussion and Assessment

Victoria is progressing its arrangements to monitor significant water interception activities in line with the National Water Initiative. Studies on interception currently underway are making progress towards this, as required for this assessment.

The Commission is of the view that Victoria has made satisfactory progress on its COAG commitments in this area. The Commission will continue to track Victoria's implementation of the National Water Initiative commitments on interception.

## 3.3 Water Markets and Trading

### Assessment Issues

Trading arrangements in water entitlements are to be instituted to maximise water's contribution to national income and welfare, where systems are physically connected or hydrologic connection and water supply considerations permit trading. Under the 1994 Water Reform Framework, trading arrangements were to be finalised by 2005. The National Water Initiative expands and re-defines the 1994 water reform commitments.

Consistent with its National Water Initiative commitments, the Commission expects Victoria to:

- have removed remaining institutional barriers to temporary trade
- by June 2005, have reduced barriers to permanent trade by taking the necessary legislative and other actions to permit open trade and ensure competitive neutrality, including the implementation entitlement unbundling arrangements
- by June 2005, have taken all necessary steps to enable exchange rates and/or tagging of water access entitlements and establish an interim annual threshold limit of four per cent on permanent trade out of water irrigation areas
- demonstrate trading rules in existing water management plans facilitate trading consistent with the actions and outcomes of the National Water Initiative and demonstrate a process is in place to incorporate trading rules consistent with the National Water Initiative into new water plans
- have pathways in place by the end of 2004, leading to the full implementation by the end of 2006, of compatible, publicly-accessible and reliable water registers of all water access entitlements and trades, and
- be developing arrangements for permanent interstate trading beyond the MDBC pilot project.

### Current Trading Arrangements

Victoria has an active intrastate trading market for high security water. Currently, the *Water Act 1989* provides for water trading within the state, with different arrangements for regulated, unregulated and groundwater systems.

Within regulated systems, individual users' water

entitlements are held under rural water authorities' bulk entitlements. Water entitlements are temporarily or permanently transferable, but only between landowners.<sup>4</sup> Water may be traded in or out of an irrigation district, but a transfer may be refused if it results in more than two per cent of the total water entitlement of the district<sup>5</sup> being traded out in any given year. This restriction is in place to address concerns about stranded assets that may result from permanent trade out. Victoria acknowledges that this presents a barrier to increased trading activity, noting that the barrier has been reached in a number of irrigation districts following a surge in trade from mid-2003, but considers the rule has been important to manage local community opposition to water trading out of districts.

While Victoria permits trade in unregulated systems on a similar basis to regulated systems, a set of more restrictive, generic trading rules are applied to protect the environment and ensure downstream users' rights. System-specific trading rules may be set through the development of streamflow management plans for priority unregulated systems but, to date, generally these plans have confirmed the generic trading rules and have, in some instances, included additional constraints in the more stressed systems.

Groundwater trading is permitted under the *Water Act 1989*. However, Victoria applies a precautionary approach to groundwater trading because of concerns about the difficulties of groundwater resource assessment. Trading generally occurs only in areas covered by a groundwater management plan, and is consistent with the trading controls stipulated in the management plan.

Victoria allows temporary interstate trade to New South Wales and South Australia, but applies a late-season ban on temporary transfers into New South Wales due to divergent policies on carry-over provisions<sup>6</sup>. In its 2005 National Competition Policy report, Victoria notes the COAG requirements for interstate trade to be sustainable, with third-party effects minimised. Victoria argues that removing the late-season ban on temporary transfers to New South Wales would transgress these principles, given New South Wales water users could acquire water very cheaply at the end of the season and carry over the water, while Victorian users could not.

<sup>4</sup> Under a transfer, the entitlement is detached from the seller's land and reattached to the buyer's land.

<sup>5</sup> For all northern irrigation areas.

Victoria notes that it (together with South Australia) has argued strongly for preventing the carry over of water that has been temporarily traded to New South Wales. As yet, New South Wales has not agreed to this proposal.

Victoria actively participates in the Murray-Darling Basin Commission pilot project for permanent interstate trade (refer to the Murray-Darling Basin Commission Chapter 10).

Victoria is actively participating in the COAG Water Trading Group, coordinated by the Department of the Prime Minister and Cabinet, which is overseeing the implementation of the opening up of permanent trade in water entitlements in the southern Murray-Darling Basin. The group is also overseeing the trading studies to be conducted under the National Water Initiative.

#### Trading Rules and Approvals

A trade generally requires the approval of the water authority or the minister or their delegate. Approvals are made subject to legislative and administrative trading rules and guidelines designed to minimise any adverse impact on other consumptive users and the environment. For permanent transfers, the intention to sell must be advertised four weeks before applying for a transfer and entitlements can be transferred only with the approval of third parties who have an interest in the entitlement.

Under the National Water Initiative, Victoria is to ensure its water trading rules under existing and new water management plans for each supply system are consistent with the National Water Initiative Principles for Trading Rules. Trading rules for regulated, unregulated and groundwater systems are set out in Victoria's guide to water trading, *The Value of Water* and are accessible through the Victorian water trading website *WaterMove* (DSE, 2001). These rules provide for consideration of source or supply issues (physical connections, supply reliability), delivery issues (delivery capacity and losses, use of trading zones) and site issues (salinity and drainage impacts). The rules are reviewed at the start of each season and as required. For unregulated systems, a set of interim generic trading rules apply (discussed below), while system-specific arrangements are tailored to manage local supply and environment issues through a streamflow management plan. Groundwater trading is limited in Victoria, and can occur only under the trading conditions specified under the relevant groundwater management plan.

The generic trading rules that apply in Victoria's unregulated rivers north of the Great Dividing Range limit upstream trade, particularly for summer diversion licences, and impose a 20 per cent reduction on trade downstream (unless under a winter fill licence). Exchange rates convert the volume of the allocation traded by the seller to a volume available to the buyer. It is a means of minimising third-party impacts. For example, every one megalitre of water right purchased in the Murray system is converted to 1.48 megalitres of winter fill entitlement in the upper Murray catchment.

Victoria has advised that these generic rules will be applied until detailed streamflow management plans for each system are developed. Victoria has adopted this approach to help reduce overallocation and overexploitation of summer flows, while still permitting trade. Victoria advises that for some systems, exchange rates have been kept after the plans have been completed, as has the rule that upstream trade must be to a winter fill licence. In Victoria, use on such streams is less than five per cent of the total.

#### Entitlement Registers

Victoria is developing a comprehensive, publicly accessible water register that will account for third-party interests in water entitlements. Victoria is also actively engaged in a national process to determine common characteristics to be applied to registry systems to achieve national compatibility. Victoria has advised that its register will be built by mid-2006 and it will be operational from 1 July 2007. More sophisticated water accounting arrangements will also be implemented through this project.

#### Future Reforms

Under *Our Water Our Future*, Victoria is proposing changes to its entitlements and trading arrangements to encourage the expansion of intrastate and interstate water markets. These changes are reflected in the Water (Resources Management) Act 2005. Expanded interstate trading is scheduled for commencement on 1 July 2006. Administrative arrangements for the unbundling of water entitlements will begin to take effect from 1 July 2007.

Under these reforms Victoria will:

- unbundle water entitlements into water shares, share of delivery capacity, and a licence to use water on site,

separating the tradeable share from the other elements and enabling leasing of water and the development of a range of derivative products

- limit the total volume of water that can be held by a non-water user in each supply system to ten per cent of the system's total entitlement, to address irrigators' concerns of the possibility of a market dominated by a few entitlement holders
- allow water users to hold twice the volume of water shares permitted to be used under their water use licence, to secure water for periods of low seasonal allocation (any excess allocation may be traded)
- develop a single, web-based public register of all water-related entitlements, to protect entitlement integrity and third-party interests
- convert 'sales' water into new lower reliability tradeable entitlements, separate from high security entitlements
- allow shares of delivery capacity to be traded, to help improve service delivery and efficiency
- allow rural water authorities to introduce fixed annual charges for shares of delivery capacity, tied to land, to manage increased delivery costs and flow-on effects of permanent trade out of irrigation areas, on the condition that the charges comply with specific government requirements
- adopt an approach to determining fixed delivery charges and exit fees that is based on the value of maintaining the infrastructure supplying an irrigation area, over the planning period for the infrastructure assets
- remove the annual two per cent limit on permanent trade out of irrigation areas (districts) once entitlements are unbundled (for administrative simplicity) and delivery access charges are in place (to manage stranded assets)
- allow temporary trade of environmental water (when held as a bulk entitlement), but only when this is in line with the environmental operating strategy for the entitlement and following approval by the secretary of the Department of Sustainability and Environment, and
- permit permanent interstate trade (by tagging as well as by exchange rates) once water entitlements are unbundled and only where water entitlements in the

recipient state (including entitlements within irrigation corporations and trusts) can move as freely to Victoria as Victoria's entitlements can move to the recipient state.

Under the National Water Initiative, Victoria committed to raise the threshold for trade out of irrigation areas to four per cent by June 2005, at the same time as New South Wales was to amend its legislation to give effect to an agreement with its major irrigation corporations to permit trade out of the irrigation corporation areas. This has not yet occurred. Victoria has advised that it can lift its annual trade out limit to the interim four per cent of entitlement for irrigation areas (called individual irrigation districts in Victoria) immediately, by regulation.

Victoria has agreed to the use of water access entitlement exchange rates and water access entitlement tagging to facilitate intrastate and interstate trade. The *Water (Resources Management) Act 2005* provides for tagging-based trade. Administrative arrangements to enable tagging in Victoria will be introduced in July 2007, following the conversion of existing water rights into unbundled entitlements, and the creation of the necessary water registers. Use of exchange rates is legislatively feasible in Victoria. Negotiations between Victoria, New South Wales and South Australia on appropriate arrangements for interstate trade are still underway. At the time of drafting this report, Victoria and South Australia were close to finalising an agreement to allow trade between those two states using exchange rates.

Interstate trading in the Murray-Darling Basin is also subject to the provisions of the 1992 Murray-Darling Basin Agreement. Victoria, New South Wales and South Australia (and the Commonwealth) are currently revising the relevant parts of the agreement to permit expanded interstate trade.

Under the *Our Water Our Future* reforms, Victoria has imposed a ten per cent limit on the total volume of water that can be held by non-water users in each supply system<sup>7</sup>. Victoria advises that the ten per cent limit is a response to the concerns raised by the irrigation community during the consultation process. The irrigation community argued that speculators would have the ability to unreasonably

force up the prices of water. Victoria has previously noted that this argument has little merit, given no water can be bought unless an irrigator chooses to sell. Nevertheless, Victoria has decided to proceed with this ten per cent rule, stating that this limit is unlikely to be reached in the near future. Victoria has also indicated that, if reached, the limit can be increased, at the discretion of the minister, but only following consultation with affected parties.

Victoria is committed, through the National Water Initiative, to a review of the impact of trading arrangements by the relevant southern Murray-Darling Basin parties (the Australian, New South Wales, Victorian and South Australian governments) no later than 2009.

The current four-week notification period for intent to permanently transfer an entitlement will be removed once the new unbundling arrangements are finalised and the water register is operational.

### Submissions

In its submission, the World Wildlife Fund Australia (WWF-Australia) comments that the environmental impacts of transferring water need to be fully understood prior to allowing water to be traded. Water trading that results in a negative impact on the environment—either through instream impacts or on-ground use—should not be allowed. A precautionary approach must be applied where these impacts are not fully understood.

The WWF-Australia has requested that the Commission require jurisdictions to have in place trading rules that prevent water trades that will result in net harm to the environment—either through use of the water onsite or by flow changes due to the shift in extraction points. A further request is that, where the trading rules are in place, their effectiveness be assessed.

The Combined Environmental Non-government Organisations' (NGOs') submission notes that current water accounting systems do not adequately account for the possible environmental impacts of transfer of entitlements.

<sup>7</sup> Non-water users include investors, environmental managers and Victorian entitlements used interstate.

## Discussion and Assessment

Victoria has made progress in developing an effective legislative and administrative framework for water trading. There are still some constraints on trade that may hinder the broadening and deepening of both intrastate and interstate water markets.

Under the National Water Initiative, Victoria was to immediately remove all institutional barriers to temporary trade of water entitlements. For the most part, Victoria has effective arrangements for temporary trade; however, it continues to impose a late-season ban on temporary transfers into New South Wales, due to divergent arrangements for carry over of allocations. The Commission acknowledges Victoria's concerns that allowing such trades would transgress competitive neutrality as a trading principle. Nevertheless, the Commission considers this restriction to be inconsistent with Victoria's COAG commitment to establish compatible institutional and regulatory arrangements with other jurisdictions that facilitate interstate trade.

For this assessment, the Commission is looking for Victoria to be well advanced in the removal of existing institutional barriers to permanent water trade and the development of the necessary legislative and administrative arrangements to establish an interim annual threshold limit of four per cent of total water access entitlement for permanent trade out of water irrigation areas.

The Commission recognises that the implementation of the *Our Water Our Future* reforms in Victoria will help facilitate expanded intrastate and interstate trade and that the necessary enabling legislation has been introduced. The Commission does have serious concerns that both the delay in implementation of the reforms (administrative arrangements will not be in place until mid-2007), and certain aspects of the reforms themselves, will continue to pose significant barriers to the full and open trade to which Victoria is committed in the National Water Initiative.

Until the arrangements for unbundling of entitlements under *Our Water Our Future* are finalised (July 2007), barriers to permanent trade will continue under Victoria's existing entitlement arrangements, as follows:

- the ongoing linkage of water entitlements to land continues to prevent the entry of non-landholder participants to the water market, and
- given entitlement unbundling is a prerequisite for water entitlement tagging, the expansion of tagging facilitated interstate trade will continue to be delayed.

New barriers to trade will also be imposed under the *Our Water Our Future* reforms, as follows:

- the ten per cent limit on non-water users' holding of entitlements will effectively continue the linkage of water entitlements to land for 90 per cent of entitlements, and
- once a water user's water share exceeds twice the volume they are able to hold under their water use licence, they are classified as 'non-water users', and become subject to the ten per cent rule, further restricting investment in the water market.

The Commission acknowledges the delay in entitlement unbundling until 1 July 2007 is due to practical implementation issues, to minimise the risk of disruption to users and protect the integrity of water accounts. Victoria was to have already completed the administrative separation of water from land titles, or, to at least demonstrate that, in the interim, the ongoing linkage does not present a significant barrier to trade. The Commission recognises that trading has been occurring within Victoria. However, the Commission remains concerned that Victoria's progress on this front is not consistent with its longstanding COAG commitment to fully separate water from land, to maximise flexibility for water users, and fully realise potential investment opportunities presented by the water market independent of land.

With regard to the ten per cent rule, the Commission is particularly concerned that Victoria is consciously introducing a new and possibly significant barrier to trade, despite its COAG commitments to remove trade barriers. The Commission notes Victoria's position that the limit will not be reached in the near future and that there is a consultative review mechanism. The Commission remains concerned that such a measure may become entrenched in Victoria's trading arrangements, becoming difficult to lift or remove. Since any interstate tagged trades or trading to environmental uses would also be included in the calculation



of the ten per cent, the Commission is also concerned about the potential impact on expanding interstate and environmental water markets.

In order to meet its COAG commitments in this area, the Commission urges Victoria to remove the provision or provide for its early sunset.

The Commission considers Victoria's trading rules are generally consistent with the principles set out in the National Water Initiative. The Commission notes that, for regulated systems, water for the environment is provided through the bulk entitlement process and the potential impacts of trade are managed through the use of trading rules by the government and water authorities.

The generic trading rules, which apply in Victoria's unregulated rivers north of the Great Dividing Range, prohibit trade upstream and impose a 20 per cent reduction on trade downstream (unless under a winter fill licence). This exchange rate is used to reduce the volume of the allocation traded by the nominated rate as a means of limiting water use and minimising third-party impacts. The Commission considers the application of an administrative exchange rate such as this is more a disincentive to trade than providing a direct influence on water use.

The Commission agrees with Victoria that unregulated streams can be adversely affected by relatively small amounts of use and notes that use on such streams is less than five per cent of the total. However, the Commission can see no reason why such impacts could not be managed through other appropriate trading conditions in the relevant streamflow management plan. The Commission considers the continued use of reduction factors to be inconsistent with COAG commitments and looks to Victoria to discontinue their use as soon as possible.

The Commission notes that Victoria is progressing the implementation of a robust, publicly accessible water entitlement register that will recognise third party interest. The Commission stresses the importance of a strong entitlement register in supporting its proposed entitlement unbundling arrangements and in underpinning market confidence and looks to Victoria to ensure its 2006-07 timeframe for implementation is adhered to.

The Commission notes that the four-week notification period for intent to permanently transfer an entitlement will be removed once the new unbundling arrangements and water register are operational. The implementation of the water register will provide greater protection for third-party interests and speed up the approvals process. In the meantime, the Commission accepts timeframes for the current approvals process are necessary to provide for protection of third-party interests.

The Commission considers Victoria to have made some progress in developing its intrastate trading arrangements. However, the Commission remains concerned that significant barriers persist as a result of delays in implementing reforms that support water trading, and that new barriers will also be introduced through the new arrangements.

For this assessment, the Commission does not consider Victoria to have fully met its COAG commitments, particularly in light of the state's reaffirmed commitment to water trading under the National Water Initiative. Commitments in relation to water trading in the Southern Murray-Darling Basin are discussed below.

#### Southern Murray-Darling Basin Water Trading Progress

For this assessment, New South Wales, Victoria and South Australia were to demonstrate that, by June 2005, they had taken all necessary steps, including making corresponding legislative and administrative changes, to enable exchange rates and/or tagging of water access entitlements, in order to enable the expansion of interstate trade in the southern Murray-Darling Basin (in accordance with clauses 63 (i) and (ii) of the National Water Initiative).

The Commission acknowledges that there are instances where permanent trade out of some irrigation areas has been significant, including in Victoria. Nevertheless, it is concerned about the barrier to trade presented by the continuing two per cent limit for permanent trade out of irrigation areas. The Commission notes that Victoria has not as yet implemented the four per cent limit, despite the introduction of complementary arrangements in other jurisdictions.

The legislative arrangements for interstate water access entitlement tagging in the southern Murray-Darling Basin are in place in New South Wales. However, Victoria

and South Australia have not yet put corresponding administrative arrangements in place that will allow for tagging based trade across state borders. Nor have the three states developed all the arrangements necessary for practically managing tagged interstate trade once it becomes administratively possible.

All states have been actively participating in the Murray-Darling Basin Commission pilot project for permanent interstate trade. Furthermore, New South Wales, Victoria and South Australia have previously agreed (in the Murray-Darling Basin Commission context) that a system of exchange rates would be used to enable the expansion of permanent interstate trade. In this context, all states had been working for a number of years to develop a matrix of exchange rates. In the second half of 2005, New South Wales rejected the modelled exchange rate, insisting that tagging should be used for interstate trading.

As a result, at 1 January 2006, water was unable to be traded between all three states in the terms of the COAG commitment because the necessary steps had not been collectively taken by New South Wales, Victoria and South Australia. Furthermore, the continuing stalemate - with New South Wales not agreeing to trade using the Murray-Darling Basin Commission determined exchange rate matrix and the inability of Victoria to deliver tagged trade until it introduces the necessary administrative arrangements (mid-2007), and South Australia's lack of a timetable for tagging - means that meeting the COAG commitments in this area will continue to be delayed. In addition, the Commission notes that there are other matters still to be settled to operationalise trading in the southern Murray-Darling Basin (including changes to Schedule E to the Murray-Darling Basin Agreement which provides the institutional and regulatory framework for the operation of interstate trade in this part of the Basin).

The failure of southern Murray-Darling Basin states to reach agreement on the necessary arrangements is preventing the further opening up of the interstate water trading market as required by the COAG commitments, representing a major setback to the COAG water reform process.

The Commission recognises that considerable effort has been made by all three jurisdictions to progress the development of interstate trading arrangements. Nevertheless, it appears that interstate trade between all

states in the southern Murray-Darling Basin is unlikely to be enabled before 1 July 2007 at the earliest.

The Commission also notes that states are developing bilateral arrangements to allow some interstate trade before July 2007. The Commission understands that New South Wales and Victoria have explored arrangements whereby they can trade using a manual water access entitlement tagging system. At the time of drafting this report, Victoria and South Australia were close to finalising an agreement to allow for trade between those two states using exchange rates.

However, while each state is making some progress towards expanding interstate trade on a bilateral basis, they have manifestly not met their collective commitments to open up interstate trade of permanent water entitlements across the southern Murray-Darling Basin.

The Commission notes the advice of the three southern Murray-Darling Basin states that they are working toward a tagging-based trading system across all jurisdictions by July 2007; however, the Commission considers this an unacceptable delay because it is two years behind the National Water Initiative timeframe for implementation of this key element of water reform.

Also, the Commission is concerned at the prospect of further slippage by the states in meeting these commitments. In the Commission's view, it is critical to maintain momentum on the further expansion of interstate water markets - permanent and temporary - to realise many of the gains of national water reform.

Given the states' failure to meet their commitment in respect of a major element of the COAG water reforms, and in view of the Commission's concerns about the prospect of further slippage, the Commission recommends a suspended National Competition Policy payment penalty of five per cent for each southern Murray-Darling Basin state. The Commission recommends that this payment be recoverable if the states collectively demonstrate, to the Commission's satisfaction, compliance with the following conditions by 1 January 2007:

- that water access entitlements can be permanently traded freely between all interstate sources in the southern Murray-Darling Basin (beyond the existing

limitations of the Murray-Darling Basin interstate trade pilot) in accord with the initial COAG National Water Initiative commitment to open up permanent water trade in this region

- that any remaining barriers (for example, in the way water entitlements are specified and converted, administrative barriers, unjustified trading rules, or unacceptable transaction costs) that may affect potential trade have been identified, and
- that there are timely and sufficient steps being taken to overcome any such remaining barriers.

The Commission signals now its intention to recommend that the suspended payments become permanent deductions if the three states collectively are not able to demonstrate, to the Commission's satisfaction, compliance with the above conditions by 1 January 2007.

### 3.4 Best Practice Water Pricing and Institutional Arrangements

Victoria has committed to five water pricing reforms (further details are provided in *Our Water Our Future*):

- structuring water prices to reward water conservation and encourage efficient use of alternative, more sustainable, sources of supply
- funding initiatives that promote the sustainable management of water and address adverse impacts to the environment associated with its use
- ensuring prices recover the cost of delivering water services
- protecting the interests of customers by appointing the Essential Services Commission as the economic regulator of the entire water industry, and
- introducing revised concession arrangements with increased benefits and less complexity.

### 3.4.1 Water Storage and Delivery Pricing

#### 3.4.1a Metropolitan

##### Assessment Issues

##### *Full cost recovery*

Victoria is required to demonstrate that there has been substantial movement towards upper bound pricing for all metropolitan water and waste water businesses. For those businesses that are not pricing close to the upper bound of cost recovery, Victoria should demonstrate price paths are in place that will move them towards the upper bound of cost recovery.

##### *Dividends*

Victoria is required to demonstrate that dividend policies for metropolitan water and wastewater businesses comply with COAG obligations, in particular, that it mirrors commercial practice and is competitively neutral.

##### *Cross-subsidies*

The Essential Services Commission enables independent scrutiny and regulation of Victoria's approach to water and wastewater pricing. Victoria has been asked to report if any cross-subsidies have been identified since the establishment of the new regulatory arrangements, if these are being transparently reported, and what action has been taken to remove them.

##### Cost Recovery

Currently, Victoria's metropolitan water authorities are setting prices close to the upper bound.

On 1 January 2004, the Essential Services Commission became the economic regulator of the Victorian water industry. The Essential Services Commission released its first price decision for the urban water authorities in June 2005. All prices include a rate of return on regulatory asset values. Regulatory asset values are determined by the Minister for Water, having regard to existing price levels and the future revenue required by each authority to recover its service delivery costs. Future prices also include a return on investments to be made by authorities during the period of the price decision, calculated by applying the weighted average cost of capital to the cost of investments.

In *Our Water Our Future*, Victoria gives a commitment to recovering the full costs of service delivery without capturing monopoly rents. The cost recovery principles with which water authorities must comply are specified in the Water Industry Regulatory Order. These principles require prices, or the manner in which prices are to be calculated, to:

- provide for a sustainable stream to each water authority that does not reflect monopoly rents or inefficient expenditure
- allow the water authority to recover operational, maintenance and administration costs
- allow urban water authorities to generate a return on past investments in a manner determined by the Minister for Water, having regard to existing price levels and the future revenue required by each authority to recover its service delivery costs, and
- allow water authorities to recover a rate of return (the financing costs) on future investments made to augment existing assets or construct new assets.

Victoria has separated the base costs of delivering water services from the requirement that water authorities pay an environmental contribution. Price increases for base costs in 2004–05 were in the order of the increase in the consumer price index plus three per cent, with the actual increases based on the financial needs of each water authority. The price increases are specified in the Victorian Government's Melbourne Metropolitan Water, Wastewater and Drainage Services Pricing Order 2004 and the regional urban water authorities' corporate plans.

In *Our Water Our Future*, a commitment is given to phase out the four per cent rate of return on assets that provide bulk water services to regional urban authorities.

The Commission notes that in *Our Water Our Future*, Victoria undertakes to determine the extent to which each urban water authority's prices include a return on past investments having regard to existing levels of return and the future revenue required by each authority as identified through the Essential Services Commission's first price review process.

## Dividends

At the time of the 2004 National Competition Policy assessment, Victoria had not progressed its undertaking to develop a commercially-based dividend framework for the water industry, but indicated that it was considering a dividend policy for the water industry. In *Our Water Our Future*, Victoria indicated that the dividends paid by water authorities to the government will continue to be determined by the current government dividend policy.

A commercial dividend arrangement—based on profitability and the government's dividend benchmarks for government business enterprises—applies to Victoria's water authorities.

Dividends for Victoria's government business enterprises are determined with reference to two general benchmarks:

- dividend = 50 per cent of net profit after tax, and
- dividends + income tax paid or payable = 65 per cent of profit before tax.

The first benchmark is based on a review of the commercial dividend pay-out rate of selected entities in the private sector. The second benchmark is considered the appropriate distribution benchmark for water authorities because most of the water authorities are not yet in a tax paying position.

Individual dividend levels may vary from the benchmarks, due to the liquidity of the authority, its capital requirements, and gearing and interest cover. The framework provides discretion to adjust an authority's reported profits for financial considerations such as developer revenue, government contributions and certain non-cash items such as assets contributed by developers.

Significantly, the framework reflects the principle that dividends should be paid only out of current profits or accumulated profits. This ensures that sufficient funds are retained in the authority to enable it to conduct its business of delivering services to customers.

The established practice for facilitating dividend payments from the water authorities allows for the Treasurer to determine the amount and timing of dividends, following consultation with the Minister for Water and the boards of the authorities. The current dividend arrangements recognise that there are separate roles for the Treasurer

(as shareholder minister) and portfolio (responsible) minister with respect to water authorities. The dual ministerial responsibility ensures that the policy interests of government with respect to sustainable management of water are appropriately balanced by the Treasurer's financial responsibilities for the Victorian public sector.

#### Cross-subsidies

The Essential Services Commission has not identified any significant or distortionary cross-subsidies as part of its recent price decision process.

With the exception of backlog sewerage services, Victoria considers cross-subsidies in the regional water authorities supplying urban services to have been removed, as prices for these services are consumption based and full cost recovery had been achieved at the lower bound.

The only area of cross-subsidy is when a backlog sewerage or new town sewerage scheme is provided by a metropolitan or regional urban water authority at less than the full cost of that scheme. The costs associated with these schemes are identified in the water plans, which authorities submit to the Essential Services Commission for a defined regulatory period. Any shortfall in revenue is recovered from the broader customer base<sup>8</sup>. This approach ensures that the compulsory sewerage schemes required for public health and environmental purposes are affordable. Customers are made aware of the cross-subsidies through the authorities' consultation processes required as part of the process to develop water plans and subsequently through the Essential Services Commission's extensive consultation process.

#### Submissions

In its submission, the Consumer Law Centre of Victoria:

- proposes that allowances be made for water and wastewater businesses to price water at an affordable level for essential purposes, and that this should not offend the requirement that water businesses recover the full cost of provision through pricing

- recommends that the Commission recognise the need for cross-subsidies to address the affordability of access to water for essential purposes (that is, basic household use), and
- points out that, because water businesses in Victoria are monopoly businesses and publicly owned by the Victorian Government, they are not competing for business, hence competitive neutrality in dividend policies is not applicable.

### Discussion and Assessment

#### Cost Recovery

With regard to cost recovery for metropolitan water and wastewater, the Commission considers that Victoria has met its COAG commitments. Victoria has reported that metropolitan water authorities are setting prices close to the upper bound.

The Commission notes that Victoria undertakes to determine the extent to which each urban water authority's prices include a return on past investments, having regard to existing price levels and the future revenue required by each water authority as identified through the Essential Services Commission's first price review process. The Commission also notes that Victoria intends to remove the four percent rate of return on assets providing bulk water services to regional urban authorities, and that rates of return on all future investments and on existing assets reflected in the regulatory asset values set by the Minister for Water will be calculated using the weighted average cost of capital.

#### Dividends

With regard to dividend policies for metropolitan water and wastewater businesses, the Commission considers that Victoria has met its COAG commitments. More specifically, on the basis of information provided by Victoria on the process for calculating dividends, the Commission is satisfied that these mirror commercial practice.

The Commission notes the commitment given by Victoria in *Our Water Our Future*, that the dividend policy for regional, urban and rural authorities will be examined in conjunction with proposed changes to accounting standards, pricing and other financial policies, and proposed governance and institutional reforms.

<sup>8</sup> Water authorities develop water plans for a defined regulatory period setting out: what the authority proposes to achieve over the period with respect to meeting future demand and complying with its regulatory requirements; the services to be provided and the programmes to be undertaken to meet future demands and regulatory requirements; the authority's revenue requirements; and the authority's proposed prices, or the manner in which prices will be determined, for each of its services. The Water Plan will be used as the basis for consulting with customers and stakeholders.

### Cross-subsidies

By demonstrating that most cross-subsidies have been removed, and that those that remain are being transparently reported, the Commission considers that Victoria has met its COAG commitments in this area.

The Commission notes the recommendation by the Consumer Law Centre of Victoria that cross-subsidies are required to address the affordability of access to water for essential purposes (basic household use). To be consistent with COAG commitments, the Commission considers that cross-subsidies that are not consistent with effective and efficient service provision should be removed and that the needs of specific customer classes may be addressed through a transparent community service obligation, if deemed appropriate.

#### 3.4.1b Rural and Regional

##### Assessment Issues

Victoria is required to demonstrate for rural and regional systems that:

- they have achieved at least the lower bound of cost recovery and are moving towards the upper bound, or
- they have established a price path to achieve at least the lower bound of cost recovery with transitional community service obligations made transparent, or
- for schemes where the lower bound of cost recovery is unlikely to be achieved in the long term, that they have made the community service obligations required to support the scheme transparent, and
- that they have made cross-subsidies transparent.

##### *Murray-Darling Basin Commission Costs*

Victoria is also required to show that River Murray Water and MDBC costs are fully disclosed, and that it is identifying and approximately allocating the proportion of costs attributable to water access entitlement holders.

##### Rural Systems - Cost Recovery

**Victoria's rural water authorities currently recover operational, maintenance and administrative costs, finance charges (as relevant) and a renewals annuity that is based on the forecast capital expenditure required to replace and**

**renew existing assets in order to maintain their service delivery capability.**

These water authorities use normalised revenues that are based on ten year rolling averages of sales to ensure financial self-sufficiency. There will be minor fluctuations between under recovery and over recovery for each authority, from year-to-year, due to unforeseen and seasonal variations in expenses and revenues. Even so, this approach ensures full cost recovery over time. Each individual rural authority is on average around the lower bound.

The Essential Services Commission will be responsible for pricing for these authorities from 1 July 2006. In the interim, the Minister for Water, in consultation with the Treasurer, retains responsibility for approving prices for 2005–06.

Victoria will be better placed to demonstrate how rural authorities are progressing towards upper bound cost recovery once the Essential Services Commission releases its final decision on water prices, for 2006–07 to 2007–08, for these water authorities. The Water Industry Regulatory Order Clause 14(a)(v) requires that the Essential Services Commission must be satisfied that prices contained in a water plan 'allow the regulated entity to recover a rate of return on investments made after 1 July 2004 to augment existing assets or construct new assets'. This clause will ensure that rural prices continue to move towards the upper bound.

In *Our Water Our Future*, Victoria gives an undertaking to exempt rural authorities from generating a return on past investments<sup>9</sup>. The revenue generated by the four per cent rate of return is currently used by rural water authorities to pay a dividend to government and to fund a number of activities such as water quality monitoring or providing recreational facilities at storages. Alternative arrangements will be made to support the activities previously funded by this four per cent return. In the future, prices will need to recover all financing costs associated with new investments, including the costs of debt or equity.

<sup>9</sup> This is in recognition of the fact that the costs associated with constructing the existing rural infrastructure many years ago are largely sunk (that is, these costs have either already been recovered or were not expected to be recovered because they were funded by government—either directly or through debt forgiveness—many years ago).

### Regional Systems – Cost Recovery

Regional water authorities are setting prices that are, on average, slightly above the lower bound. The same approach used by the Essential Services Commission in determining prices for Victoria's metropolitan water service providers applies to the regional water providers. Victoria considers that its progress in implementing its cost recovery commitments is best reported in the context of all urban authorities, regardless of the number of connections.

As consistent with the principles in the Water Industry Regulatory Order, the prices specified in each regional authority's price determination will enable authorities to generate sufficient revenue to recover the costs of service delivery over the regulatory period and provide a rate of return on existing and new assets.

### Community Service Obligations

In Victoria's water industry, community service obligations are limited to the provision of concessions to eligible concession card holders, rebates to certain not-for-profit organisations and payments under the utility and relief grants scheme. These community service obligations are provided for urban water and wastewater services and for some rural water services, and are funded by the government in a transparent manner.

The Victorian Government considers that these concessions provide a public benefit as they improve the affordability of water services for people on low incomes and certain not-for-profit organisations, such as welfare and sporting agencies, charity, education, hospitals and nursing care, and religious organisations.

Under reforms outlined in *Our Water Our Future*, Victoria provides for an increase in the maximum dollar amount of the current cap on water and sewerage concessions for all eligible pensioners and Health Care Card holders. All eligible pensioners and Health Care Card holders will receive 50 per cent off their total water and sewerage bill to a maximum of \$150 per annum as of July 2005 and indexed by the consumer price index thereafter. Water authorities will place a greater focus on a better-targeted delivery mechanism to Health Care Card holders to minimise fraud.

Information on the value of community service obligations delivered is available from both the Department of Human Services and each water authority. Victoria's water authorities report the type and value of community service obligations delivered in their annual reports.

### Cross-subsidies

Victoria considers cross-subsidies in the rural sector to have been removed as regional water authorities supplying rural services charge to cover the full costs of service delivery and set prices in consultation with their water services committees.

The Essential Services Commission has not identified any significant or distortionary cross-subsidies as part of its recent price decision process.

### Murray-Darling Basin Commission Costs

While supporting the need for transparent reporting of contributions to the costs of operating the Murray-Darling Basin Commission and River Murray Water, Victoria's position remains that, as River Murray Water is an internal water business of the Murray-Darling Basin Commission, the Murray-Darling Basin Commission should have primary responsibility for reporting contributions from participating jurisdictions to River Murray Water.

Nevertheless, during 2005–06 Victoria will investigate options for more transparent reporting of its financial contribution to the Murray-Darling Basin Commission.

Victoria notes the issue of more transparent reporting of jurisdictions' contributions has not been looked at collectively by the Murray-Darling Basin Commission for some time. The Murray-Darling Basin Commission had instituted a strategic planning, programme and budget management review during 2004–05, which was finalised in September 2005. One of the outcomes from this review has been an agreement by the Murray-Darling Basin Commission to initiate an external cost-efficiency review of River Murray Water. The review will address the future conduct of River Murray Water's financial reporting and budget management practices, and it is to be completed by June 2006. Victoria will then consider how to address reporting and budget management practices in June 2006.

## Discussion and Assessment

The Commission considers that Victoria has made significant progress towards meeting its COAG commitments in this area.

### Rural systems – Cost recovery

Victoria has made some progress towards meeting its COAG commitments regarding cost recovery for rural systems. Victoria has demonstrated that individual rural water authorities are on average recovering costs around the lower bound. The Commission notes that Victoria will be better placed to demonstrate how rural authorities are progressing towards upper bound cost recovery once the Essential Services Commission releases its final decision on water prices for 2006–07 to 2007–08 for these authorities. The Commission will maintain a watching brief on Victoria's progress in this matter.

### Regional systems – Cost recovery

Victoria has made significant progress towards meeting its COAG commitments regarding cost recovery for regional systems. Victoria has reported that regional water authorities are setting prices, on average, slightly above the lower bound, and that prices specified in each regional water authority's price determination will enable authorities to earn a rate of return on existing and new assets, that is, move towards the upper bound. The Commission will maintain a watching brief on Victoria's progress in this matter, especially because of the need for price paths to be in place to move regional authorities towards the upper bound.

### Cross-subsidies

Victoria has made significant progress towards meeting its COAG commitments regarding cross-subsidies for rural and regional systems. Victoria considers cross-subsidies in the rural sector to have been removed and the Essential Services Commission has not identified any significant or distortionary cross-subsidies as part of its recent price decision process.

### Community Service Obligations

Victoria has made significant progress towards meeting its COAG commitments regarding community service obligations. Victoria has demonstrated that it is transparently reporting community service obligations for both rural and regional systems.

### Murray-Darling Basin Commission Costs

As Victoria has not demonstrated that River Murray Water and Murray-Darling Basin Commission costs are fully disclosed, and that it is identifying and appropriately allocating the proportion of costs attributable to water access entitlement holders, the Commission considers that Victoria has not fully met its COAG commitments in this area.

Victoria's support of transparency in reporting contributions to the costs of operating the Murray-Darling Basin Commission (costs of resource management) and River Murray Water (costs of water delivery) is noted, as well as its intention to investigate options for more transparent reporting of its financial contribution to the Murray-Darling Basin Commission.

The Commission considers transparency in reporting on the proportion of funding that is used to operate the Murray-Darling Basin Commission versus River Murray Water is a joint responsibility between the Murray-Darling Basin Commission and Victoria. Such transparency is required because the costs are being allocated to the Victorian Government and Goulburn-Murray Water customers separately, and because the states have different policies on passing on River Murray Water costs to water users. The Commission acknowledges that this COAG commitment is not limited to Victoria alone—other states are also required to ensure that River Murray Water and Murray-Darling Basin Commission costs are appropriately and consistently allocated to users.



### 3.4.2 Cost Recovery for Planning and Management

#### Assessment Issues

Victoria is required to demonstrate that resource management costs are being recovered, consistent with COAG pricing obligations. In particular Victoria is required to demonstrate:

- that costs associated with activities undertaken for governments are being recovered
- that prices to recover resource management costs are being independently set or reviewed
- the extent to which costs associated with the provision of licences for water extraction are being recovered
- the extent to which Murray-Darling Basin Commission costs are being recovered
- the extent to which resource management costs are being recovered
- that resource management costs are transparently handled and publicly reported
- that adequate public consultation and education about water management charges has been undertaken, and
- that rural water authorities' resource management costs are being transparently reported.

**In the Victorian water industry, water planning and management activities include the following:**

- **management of resource aspects—bulk entitlements**
- **administration of licences**
- **development and administration of streamflow management plans and groundwater management plans, and**
- **development of sustainable water strategies.**

**Water authorities undertake the following tasks with respect to water planning and management activities:**

- **the administration and management of bulk water entitlements that have been issued to them**
- **the administration of licences**
- **the implementation (that is, the associated compliance, reporting and monitoring tasks) of groundwater management plans and streamflow management plans**

- **preparation of water supply demand strategies—the implementation of these will occur during the regulatory period commencing 1 July 2008, with the costs of implementation included in water authorities' water plans for that regulatory period, and**
- **participation in the development of sustainable water strategies.**

**The costs borne by water authorities are passed on to their customers. The costs attributable to planning and management activities are, and will be, included in the water plans that water authorities submit to the Essential Services Commission. The Essential Services Commission, as part of its review of pricing proposals, will examine the efficiency of the authorities' costs with respect to how effectively these authorities are meeting their water planning provision and management obligations.**

**The water plans themselves are subject to consultation with customers and stakeholders and are made publicly available on the Essential Services Commission's website.**

**Water authorities currently internalise these costs by incorporating them into their operating and capital cost structures. They are generally not separately reported in annual reports.**

**It is intended that future water planning and management costs be identified in the water plans for the next regulatory period to make them more transparent. Consultation and education about these costs will be undertaken as part of the process to develop water plans for the next regulatory period.**

**Development of current water planning and management activities undertaken by the Victorian Government are not cost recovered. The development of forward looking water planning and management activities (such as the groundwater management plans, streamflow management plans, sustainable water strategies, and other initiatives from *Our Water Our Future*) are funded through the environmental contribution discussed in Section 3.4.5 on Environmental Externalities.**

## Discussion and Assessment

The Commission considers that Victoria has made significant progress towards meeting its COAG commitments for recovering planning and management costs. Victoria has demonstrated that: costs associated with activities undertaken for governments are being recovered; prices to recover resource management costs are being independently reviewed by the Essential Services Commission; resource management costs include the costs of licence administration; resource management costs will be transparently reported in the water plans available on the Essential Services Commission website; and water plans are subject to consultation with customers and stakeholders.

However, it is not clear to the Commission that development and administration of current planning and management activities undertaken by the Victorian Government are being recovered, or that *rural* water authorities' water planning and management costs will be identified in the water plans that authorities submit to the Essential Services Commission and the extent to which planning and management costs are recovered from customers.

### 3.4.3 Investment in New or Refurbished Infrastructure

#### Assessment Issues

The Commission will examine compliance where Victoria has decided to proceed with a particular project. In conducting its assessment, the Commission will consider:

- the extent to which the economic viability and ecological sustainability credentials of infrastructure proposals have been established prior to works commencing
- the environmental assessment processes for all projects, whether publicly or privately funded, and
- the economic viability appraisals of new or refurbished infrastructure proposals only where governments contribute funds.

\* The NCC 2004 NCP Assessment (page1.20) explained the economic viability test as involving consideration of whether a project will deliver an overall public benefit to Australia. Commercial or financial viability is an important element, "a project that is not commercially viable may still satisfy the economic viability test if there is robust evidence that the project will deliver a net social benefit that outweighs the costs of not being commercially viable".

**The *Investment Evaluation Policy and Guidelines* (Department of Treasury and Finance, 1996) and**

***Partnerships Victoria* address the economic viability of new investments. Under the *Investment Evaluation Policy and Guidelines*, water authorities are required to undertake a comprehensive investment evaluation for all capital works project proposals equal to or greater than \$5 million. The approval of the Treasurer is required in relation to these proposals. The Treasurer's focus is project and investment evaluation in terms of strategic direction and the potential for financial and project risk.**

***Partnerships Victoria* is the Victorian Government's policy for creating partnerships between businesses in the public and private sectors to optimise investment in public infrastructure. The policy also ensures that new investments are economically viable.**

With regard to the environmental sustainability of the proposals, authorities are also required to submit a copy of their proposals to the Minister for Water, who reviews the proposals for their alignment with the government's environmental and water resource management policy objectives.

With regard to new investment in rural schemes or dams which may impact existing bulk entitlements, the *Water Act 1989* requires ecological sustainability to be assessed before any change can be made to a bulk entitlement. Any new investment must prove its ecological sustainability before a new bulk entitlement, or necessary amendments to an existing bulk entitlement, will be approved.

Any new investments must also comply with environmental commitments and works approval processes set by the Environmental Protection Authority in accordance with the general policy framework established by government endorsed state environmental protection policies (for example, an Environmental Protection Authority works approval is required to construct a sewerage treatment plant).

## Discussion and Assessment

**Victoria has reported in its 2005 National Competition Policy Report that there was no significant new or refurbished infrastructure. Hence, Victoria has met its COAG commitments regarding investment in new or refurbished infrastructure. Victoria has reported on its process for evaluating infrastructure projects in terms of economic viability and environmental sustainability.**

### 3.4.4 Release of Unallocated Water

#### Assessment Issue

The Commission will look for Victoria to demonstrate that any releases of unallocated water, including recycled or other sources of water, are occurring in a manner that complies with its COAG water reform obligations. In particular, the Commission will consider whether:

- water plans have increased allocations to consumptive use
- the water required to achieve environmental outcomes is adequately met prior to the release of unallocated water
- the impact on the environment is considered before any new entitlements are issued
- all other avenues for meeting demand have been carefully examined, and
- market-based mechanisms are employed in the release of unallocated water, including recycled water.

The Wimmera-Mallee Pipeline Project will save an estimated 103 gigalitres per year that is currently lost through seepage and evaporation, at an estimated cost of \$501 million. Victoria's White Paper indicates that water recovered through the project will be added to the environmental bulk water entitlement for the Wimmera and Glenelg Rivers. A proportion of the savings, 10 gigalitres, will be set aside for 'new uses'.

The Commission is also looking for Victoria to:

- demonstrate that the environmental requirements of the Wimmera and Glenelg systems are adequately met before releasing water savings for new uses, and
- outline its arrangements for allocating the saved water to new users.

**Sustainable diversion limits have been determined for approximately 1600 of Victoria's catchments, varying in size from 20 to 100 square kilometres. The statewide sustainable diversion limits are precautionary estimates of the volume of water that can be extracted from a stream before there is a risk of damage to the environmental values of the stream. For a given catchment, the water available for new development is the difference between the sustainable diversion limits and the existing consumptive use commitments for urban and rural use.**

**There are 28 river basins in Victoria. There is no unallocated water in the 21 river basins that are recognised as fully developed. Water for new development must be purchased from existing entitlement holders in these river basins.**

**There is unallocated water in the other seven river basins in accordance with the statewide sustainable diversion limits.**

**For groundwater, precautionary permissible annual volumes have been developed for aquifers, taking into account any known interaction between surface water and groundwater. For a given aquifer, the unallocated water is the difference between the permissible annual volumes and the existing consumptive use commitments for urban and rural use.**

**The government, in *Our Water Our Future* (Action 2.1), recognises that stormwater and recycled water are potential resources, and legislative proposals are being developed to bring these sources of water under Victoria's water allocation framework. The statewide sustainable diversion limits do not apply in urbanised areas where stormwater is a major contributor to streamflow. The government recognises the need to develop guidelines for the diversion of stormwater, to allow for access to the resource while protecting the environmental values of streams and the interests of existing water users. As regards recycled water, the water authority with the treatment plant owns the recycled water. The authorities enter into commercial agreements with purchasers of recycled water, which may include irrigators, golf courses, and industry.**

**For significant new water allocations of surface water and groundwater, the government policy (as provided in *Our Water Our Future*, Action 2.9) is to establish an auction or tender process that allocates water resources by public advertisement of the sale, and setting of a reserve price.**

**An example of how these arrangements operate is the process for allocating the 103 gigalitres (average annual volume) of water that will be saved when channel systems are replaced with pipes in the Wimmera-Mallee pipeline project. Up to 83 gigalitres of the total will be allocated to the environmental water reserve, which is managed by the two catchment management authorities in the area. The project involves progressive savings, so Victoria is establishing a system of allocating the environment's share immediately. The remainder is to be held for consumptive use in a development reserve account, which will be allocated by an open competitive process.**

**The development reserve account proposal is to be developed in consultation with the two catchment management authorities (Glenelg-Hopkins and Wimmera) and other stakeholders; it will be submitted for approval by the Minister for Water. The development reserve account was formally established through the bulk entitlement amendment in October 2005.**

## Discussion and Assessment

**The Commission considers that the processes adopted by Victoria for allocation of new water among consumptive users are in accord with the COAG commitments.**

### 3.4.5 Environmental Externalities

#### Assessment Issues

The Commission will look for Victoria to:

- report the extent to which it is identifying and recovering environmental costs through its pricing regimes
- provide evidence that environmental costs imposed on and incurred by water businesses are transparently passed on through prices charged to water users
- where externalities are not included in pricing regimes, demonstrate price paths that will move towards achieving full cost recovery within a reasonable timeframe, and
- where not transparently incorporated into pricing regimes, show that they have identified externalities and, after examination, have concluded that inclusion of an externality in pricing is not feasible or practical.

As of/from 1 June 2005, Victorian water authorities are required to pay an environmental contribution to the government to help address any adverse environmental impacts from the use of water, as well as funding other water-related initiatives that promote sustainable water management. The water authorities are permitted to pass on the environmental contribution through price increases. The levy is set at five per cent for urban water authorities, and two per cent for rural water authorities, for the three-year period.

Victoria is required to provide information on the extent to which the levy will be used for resource management activities, and show:

- that rural water authorities' resource management costs are being transparently reported
- the extent to which the levy will be used to address environmental externalities, and
- that the environmental contribution is consistent with the COAG pricing obligations, including in relation to transparency, public reporting and appropriate attribution.

**The Victorian Government's approach to environmental externalities recognises that it is difficult to quantify some of the environmental impacts related to the provision of water services, and hence their costs. Determining the extent to which those who are using and paying for services are responsible for adverse environmental impacts is also difficult to quantify.**

**In addition, the government recognises that there are often other measures available for managing environmental impacts. Regulation or market mechanisms, such as a scheme of tradeable permits for saline drainage, may be more effective than pricing as a tool for reducing environmental impacts.**

**In *Our Water Our Future*, the government announced its decision to introduce arrangements for its water authorities to contribute funding towards initiatives that seek to promote the sustainable management of water and address the consequential adverse impacts to the environment associated with the provision of water services.**

**As is consistent with this announcement, the *Water Industry Act 1994* was amended to require water authorities to pay environmental contributions for the period 1 October 2004 to 30 June 2008 and to specify the amounts payable by each authority. The Act also provides for the minister administering the Act to make an order that specifies arrangements for the authorities to pay environmental contributions for periods from 1 July 2008.**

**Each authority is required to pay an annual environmental contribution that is based on a percentage of its existing revenues for the four year period from 1 October 2004 to 30 June 2008. Urban authorities will be required to pay an amount equivalent to five per cent of their existing revenues as an environmental contribution from October 2004. Rural authorities were not required to contribute funding until 1 July 2005, and will be required to pay an amount equivalent**

to only two per cent of their existing revenues. This delayed start date and lower contribution recognises the ongoing impacts of the drought and irrigators' role in working towards better environmental outcomes. Goulburn–Murray Water's environmental contribution will be waived until 1 July 2007, after which time it will be required to pay an amount equivalent to two per cent of its existing revenues, making a difference of \$14 million over five years.

Each authority will be able to pass on its environmental contribution through increased tariffs and charges for the provision of water and sewerage services (including trade waste services). Water authorities identify their environmental commitments and revenue requirements for meeting these in their water plans. These revenue requirements are also reflected in the prices determined by the Essential Services Commission. Customers of the water utilities are advised on their bills of the amount of the environmental levy as well as what it is being used for. As a result of the environmental levy, prices to customers are likely to increase by an average of five per cent for urban water customers and two per cent for rural customers. The Victorian Department of Sustainability and Environment annual report lists what the environmental contributions provided by the authorities are being used for.

For the four-year period ending on 30 June 2008, it is expected that approximately \$225 million will be raised from the environmental contribution. All of this revenue will be used to fund water related initiatives that seek to promote sustainable water management and address the adverse environmental impacts associated with the use of water.

Indicative funding for categories of initiatives during the first four-year period is: contribution to COAG's The Living Murray Initiative, \$35 million; Smart Urban Water Initiatives and Recycling, \$50 million; Protecting and Repairing Our Water Sources, \$100 million; Boosting the Water Smart Farms and Sustainable Irrigation and Land Management Initiatives, \$13 million; and, Water Security for Cities, Farms and the Environment, \$27 million. The total funding is approximately \$225 million.

Expenditure of the environmental contribution during 2004–05 will be reported in the annual report of Department of Sustainability and Environment in accordance with the reporting requirements set out in the *Water Industry Act*

1994. The government will review the amount of funds raised through environmental contributions, and each authority's environmental contribution, prior to 1 July 2008, and every four years thereafter.

## Discussion and Assessment

The Commission considers that Victoria has made some progress towards meeting its COAG commitments for this assessment. Victoria has created an environmental levy that is imposed on urban and rural water authorities. Funds raised through this levy will be used to fund forward-looking water related initiatives that seek to promote the sustainable management of water and address adverse impacts to the environment associated with the provision of water based services.

However, Victoria has not fully demonstrated the relationship between this levy and the environmental costs it addresses. Further, Victoria has not sufficiently demonstrated the extent to which the levy is used for resource management activities versus addressing environmental externalities, nor whether it is being appropriately attributed to the different sectors (i.e. rural and urban) and to individual water authorities. The Commission notes that urban authorities are currently paying a higher contribution than rural authorities.

The Commission will continue to look for Victoria to demonstrate: the extent to which the levy is used for resource management activities versus addressing environmental externalities; and that environmental contributions are being appropriately attributed to the different sectors and to individual water authorities.

### 3.4.6 Institutional Reform

#### Assessment Issues

##### *Independent economic regulation*

Victoria is required to provide information on the role of economic regulators in setting or reviewing prices, or price setting processes, and the extent to which conflicts of interest are addressed where the water industry regulator and the service provider are responsible to the same Minister.

The Commission is interested in the public reporting and consultation aspects of the independent body's work,

as well as its findings in relation to pricing compliance. Where the independent body's role is to review rather than set prices, the Commission will examine the manner in which the results of reviews are addressed by the relevant government, especially where pricing decisions are at variance with pricing recommendations.

#### *Participation in benchmarking processes*

The Commission will look for Victoria to demonstrate that participation in national processes for inter-agency comparisons and benchmarking, and benchmarking systems managed by Water Services Association of Australia, Australian Water Association and Australian National Committee on Irrigation and Drainage is continuing. Victoria is also required to demonstrate that there has not been a decline in participation, for metropolitan, non-major urban and rural service providers.

#### *Benchmarking the performance of water authorities – progress with development of a national framework*

Victoria is required to demonstrate that it has made progress with the development of a national framework for benchmarking of pricing and service quality for metropolitan, non-metropolitan and rural water delivery agencies, including whether appropriate consultation has occurred.

#### Independent Economic Regulation

**On 1 January 2004, the Essential Services Commission became the independent economic regulator of the Victorian water industry. Its role involves regulating prices and service standards for each water authority.**

**On 15 June 2005, the Essential Services Commission made its first pricing decision for Victoria's 17 urban water authorities. This decision will apply from 1 July 2005 to 30 June 2008.**

**The decision follows an 18-month open review process, which has included extensive consultation with water authorities, assessments by expert consultants, consideration of issues raised in submissions and comments at public forums.**

**Following the release of *Our Water Our Future*, the timeframe for regulation of rural and urban water authorities by the Essential Services Commission was extended. As a result**

**the Essential Services Commission will regulate the prices of these authorities with effect from 1 July 2006. The Minister for Water, in consultation with the Treasurer, will continue to be responsible for approving prices for 2005–06.**

#### Participation in Benchmarking Processes

**Victoria continues to participate in a number of national and state performance monitoring and benchmarking programmes, including those conducted by:**

- **the Water Services Association of Australia, which includes Victoria's major urban service providers**
- **the Australian National Committee on Irrigation and Drainage, which includes providers of rural water services in Victoria**
- **the Australian Wastewater Association, which includes coverage of Victoria's regional urban service providers**
- **the Victorian Water Industry Association, which covers Victoria's urban service providers, and**
- **the Essential Services Commission, whose performance reporting framework covers Victoria's urban service providers.**

**The Essential Services Commission is proposing to develop a performance reporting framework for Victoria's rural service providers.**

#### Benchmarking the Performance of Water Authorities – Progress with Development of a National Framework

**The Essential Services Commission has initiated discussions with several interstate economic regulators with a view to developing a system of national performance measures for the water industry. The Victorian Government is also participating in further development of a national framework for benchmarking pricing and service quality in the context of implementing the National Water initiative.**

#### Discussion and Assessment

**The Commission considers that Victoria has satisfactorily addressed its COAG commitments with regard to institutional reform. Specifically, Victoria has demonstrated that it has an economic regulator, the Essential Services Commission, that is responsible for setting prices; that the Essential Services Commission and water service providers do not report to the**

same minister; and, that the Essential Services Commission undertakes public reporting and consultation.

Victoria has also demonstrated that it is actively participating in benchmarking processes and that it is contributing towards development of a national framework.

The Commission notes that the Essential Services Commission is proposing to develop a performance reporting framework for Victoria's rural service providers. The Commission will maintain a watching brief on Victoria's progress with developing this framework and will look for consistency with the national benchmarking framework.

### 3.5 Integrating Water Management for Environmental and Other Public Benefit Outcomes

#### 3.5.1 Institutional Arrangements

##### Assessment Issues

Water planning frameworks are to provide for adaptive management of surface and groundwater systems in order to meet productive, environmental and other public benefit outcomes; to identify the environmental and other public benefit outcomes sought for water systems; and to develop and implement management practices and institutional arrangements that will achieve those outcomes.

To this end, Victoria has agreed to establish effective and efficient management and institutional arrangements under the National Water Initiative.

For the 2005 NCP assessment, the Commission is looking for Victoria to have progressed its implementation of effective and efficient management and institutional arrangements to ensure the achievement of environmental outcomes.

The Commission is also looking for Victoria to describe the public education and consultation activities undertaken in relation to the integrated management of environmental water.

***Our Water Our Future*** contains several reforms for ensuring integrated management of water for environmental and public benefit outcomes. These include the **Victorian Water Allocation Framework** and **Victorian River Health Strategy**.

Under the new Water Allocation Framework, an environmental water reserve will be established. This will be a legally recognised share of water to maintain the environmental values of a water system and other water services that are dependent on the environmental condition of the system.

Environmental water reserves will be established in all Victorian rivers and groundwater systems; either by limiting the volume of water made available for consumption or, in some regulated rivers, as a bulk entitlement specifically for the environment.

River health strategies developed under the *Victorian River Health Strategy*, in conjunction with regional sustainable water strategies, will identify:

- priority regulated rivers where the environmental water reserve will be enhanced
- volumes of water to be recovered and the most effective combination of projects required to achieve this, and
- future priority unregulated rivers and aquifers where the environmental water reserve will be enhanced.

Environmental water reserve management arrangements include the following elements:

- **Catchment Management Authorities will be the environmental water reserve manager in regional Victoria. In the metropolitan area, Melbourne Water will undertake this role. It will be responsible for the operational management of the environmental water reserve. A number of authorities already employ environmental water officers to undertake this role.**
- **Where the environmental water reserve is provided wholly or partly through conditions on a bulk entitlement or licence, or through sustainable diversion limits, the operational management role will be relatively passive. This means ensuring that environmental flows are provided, integrating them into a bigger programme of river and wetland restoration, and monitoring and reporting on river health and the water services provided.**
- **Where there is an environmental bulk entitlement held in storage, Catchment Management Authorities will be required to develop a long-term operating strategy for the allocation. This will define the target ecosystems that**

may be watered, how and under what conditions they will be watered, how much of the allocation is tradeable and the circumstances under which it could be traded. These will require approval of the Minister for the Environment and the Minister for Water.

- Catchment Management Authorities will manage any new bulk entitlements for the environment but these entitlements will be formally held by the Minister for Environment. Current arrangements for the existing environmental bulk entitlements will remain. As Catchment Management Authorities evolve as active managers of the environmental water reserve, the government may consider it appropriate for them to hold specific bulk entitlements for the environment.
- The Murray-Darling Basin Ministerial Council will have a role in coordinating the use of the environmental water reserve in northern Victoria to achieve agreed outcomes for the River Murray.
- Catchment Management Authorities will be given strengthened governance and funding frameworks to build their capacity, and enable improved performance monitoring and evaluation of environmental water reserve outcomes.
- Water authorities will be required to work closely with catchment management authorities to develop the most effective delivery pattern for the environmental water reserve while still meeting their commitments to customers.

Other features of environmental water management that Victoria considers significant are discussed below.

#### *Shared Resources between Jurisdictions*

In terms of joint arrangements between jurisdictions, Victoria is signatory to the:

- Intergovernmental Agreement on Addressing Water Over-allocation and Achieving Environmental Objectives in the Murray-Darling Basin 2004 (COAG, 2004b)—this agreement is to ensure integrated provision of environmental flows in the River Murray and its tributaries
- Border Groundwaters Agreement 1995—this agreement is to provide integrated and sustainable management of the groundwater resources of the Otway and Murray Basins along the South Australian–Victoria border, and
- Snowy Water Inquiry Outcomes Implementation Deed 2002—this agreement between the Australian, Victoria and New South Wales governments provides for the integrated management of environmental flows down the Snowy River by implementing the Snowy Water Inquiry outcomes.

#### *Inter-connected Surface and Groundwater Systems*

Victoria's approach to managing interconnected surface and groundwater systems includes:

- development of a common licensing policy framework for managing groundwater extractions and diversions from unregulated rivers
- investigations to determine areas where there are strong interconnections between groundwater and stressed surface water systems, and
- preparation of integrated groundwater and streamflow management plans for areas with strong interconnections between groundwater and stressed surface water systems.

#### *Audit, Review and Public Reporting Procedures*

Victoria has a number of audit, review and public reporting procedures, either in place or planned, as follows:

- Bulk water entitlement holders will be required to appoint an independent auditor to verify their compliance with their bulk entitlement commitments, including delivery of the environmental water reserve. The Secretary of the Department of Sustainability and Environment will oversee these audits.
- The *Water Act 1989* has been amended to enable an assessment of water resources to be undertaken every 15 years to establish whether there has been a decline in river health due to flow-related reasons or long-term decline in groundwater levels. The Victorian Environment Protection Authority will have a role in auditing this assessment and the results will be made publicly available. Where such a decline is demonstrated, the legislation will require a review to be undertaken to identify ways to restore river or aquifer sustainability.



- In addition to this statutory assessment, Catchment Management Authorities will continue to monitor the environmental condition of rivers and streams and the environmental, social and economic services that these provide.
- Two public reporting initiatives—the State Water Inventory and the State Water Accounts—have recently begun. The purpose of the State Water Inventory is to provide an annual overview of Victoria’s water resources; the State Water Accounts presents information for each of Victoria’s 29 river basins on water availability and use for surface water, groundwater and recycled water. In June 2005 the Victorian Government released *The State Water Report 2003–2004: a statement of Victorian water resources* (DSE, 2005), which consisted of the State Water Inventory and State Water Accounts. Victoria expects that the environmental flow managers in each Catchment Management Authority will provide the focal point for reporting on the environmental water reserve in their area and coordinating inputs to future State Water Reports.

#### *Environmental Water Trading*

The *Water (Resource Management) Act 2005* provides for bulk entitlements held specifically for environmental purposes to be temporarily traded, including environmental water held as access entitlements within a bulk entitlement. This will only occur where trading does not affect the achievement of the objectives of the environmental water reserve. Conditions for temporary trade of any environmental entitlement will be specified in an operating strategy for the entitlement. This is to be approved by both the Minister for Water and Minister for Environment.

#### *High Conservation Value Rivers, Reaches and Groundwater Areas*

The Victorian approach to dealing with high conservation value systems is outlined in the *Victorian River Health Strategy*. It includes:

- provision of special protection for rivers and river systems of very high community value—18 river reaches have been designated as Heritage Rivers under the Heritage Rivers Act 1992 because of their very high nature conservation, recreational, social and cultural value, and

- priority-setting with regional river health planning and target-setting processes that are designed to protect existing high value areas or areas in good environmental condition.

#### Public Education and Consultation Activities

Victoria reported to the Commission that, as part of its integrated approach to catchment and water management, it is committed to transparent and open processes that include community consultation and education programmes.

As the managers of the environmental water reserve, the Catchment Management Authorities have processes for incorporating public education and consultation activities in relation to the integrated management of environmental water.

#### Submissions

In their joint submission, Environment Victoria and the Australian Conservation Foundation expresses concern that the *Water (Resource Management) Bill* (now the *Water (Resource Management) Act 2005*) does not provide sufficient direction as to when trading of environmental entitlements is permitted. Both parties are concerned that, under the current environmental water reserve arrangements, there is insufficient public accountability for environmental water managers and the Catchment Management Authorities that employ them. In the view of Environment Victoria and the Australian Conservation Foundation, formal participatory processes that give legal standing to environmental non-government organisations would strengthen the transparency, security and integrity of the environmental water reserve.

#### Discussion and Assessment

*Our Water Our Future* has established a framework for integrating the management of water for environmental and other public benefit outcomes.

At the time of the 2004 National Competition Policy assessment, Victoria had recently released *Our Water Our Future*. Victoria has since created key work areas to ensure that its management and institutional arrangements for the integrated management of water for environmental and public benefit outcomes address each of the features

outlined in 79(i) of the National Water Initiative. The Commission acknowledges that Victoria is making progress in the key work areas required to implement each of the features, including:

- amendments to the *Water Act 1989* were completed in December 2005, enabling:
  - the statutory recognition of environmental water and establishment of an environmental water reserve
  - the Catchment Management Authorities' waterway management function to include management of the environmental water reserve and implementing management of river health
  - an assessment of water resources is to be undertaken every 15 years to establish whether there has been a decline in river health due to flow-related reasons or long-term decline in groundwater levels, and
- legislation to enable integrated groundwater and streamflow management plans is complete. Investigations to determine areas with strong interconnections between groundwater and surface water systems will be completed in early 2006. Development of a common licensing policy framework will follow in July 2006.

The Commission acknowledges that Victoria will allow the temporary trading of bulk entitlements, and access entitlements within a bulk entitlement, held specifically for environmental purposes. The Commission notes that environmental water managers will develop operating strategies for such entitlements (the environmental water reserve) that specify the conditions of trade. These strategies will be developed in consultation with relevant stakeholders and endorsed by the Minister for Water. The Commission notes that Environment Victoria and the Australian Conservation Foundation would like to see this consultation process formalised.

The Commission understands that Victoria is committed to annually reporting on the state's water resources. For example, in June 2005 the Victorian Government released *The State Water Report 2003–2004: a statement of Victorian water resources*, which consisted of the State Water Inventory and State Water Accounts. Catchment Management Authorities must report on the environmental

water reserve in their area through the State Water Accounts. The Commission considers that this places a high level of accountability on Catchment Management Authorities.

On the basis of the above discussion, the Commission considers that Victoria is making satisfactory progress towards meeting its COAG commitment in this area.

#### Public education and consultation activities

The Commission considers that Victoria has public education and consultation mechanisms in place in relation to the integrated management of environmental water. Each of the planning instruments supporting the Victorian Water Allocation Framework—regional river health strategies, sustainable water strategies, streamflow management plans—includes consultation phases and public education activities.

The Commission considers that Victoria is making satisfactory progress towards meeting its COAG commitment in this area.

### 3.5.2 Water Recovery for Environmental Outcomes

#### Assessment Issue

Where it is necessary to recover water to achieve modified environmental and other public benefit outcomes, Victoria has agreed to adopt the following principles for determining the most effective and efficient mix of water recovery measures:

- Consideration of all available options for water recovery, including investment in more efficient water infrastructure; purchase of water on the market, by tender or other market based mechanisms; investment in more efficient water management practices, including measurement; or investment in behavioural change to reduce urban water consumption.
- Assessment of the socio-economic costs and benefits of the most prospective options, including on downstream users, and the implications for wider natural resource management outcomes (eg. impacts on water quality or salinity).

- Selection of measures primarily on the basis of cost-effectiveness, and with a view to managing socio-economic impacts.

For the 2005 NCP assessment, the Commission is looking for Victoria to have progressed with the recovery of water to support the objectives of The Living Murray and the implementation of the 'First Step' decision.

The Commission will also consider Victoria's water recovery efforts under The Living Murray Initiative in terms of their compliance with COAG water recovery principles, and community engagement and consultation.

**Victoria has proposed two water recovery projects under Clause 36 of the 1992 Murray-Darling Basin Agreement. Both projects have been approved by the Murray-Darling Basin Ministerial Council and are listed on the Eligible Measures Register:**

- the Lake Mokoan Water Recovery Package will recover 44 gigalitres in water savings, for a total cost of \$60 million. The Lake Mokoan Project consists of several infrastructure measures, including:
  - decommissioning Lake Mokoan as a water storage
  - provision of an alternative water supply for affected users and pipelining of some small domestic and stock and irrigation districts, and
  - raising a headworks storage (Lake Nillahcootie) to provide greater operational flexibility.
- the Goulburn-Murray Water Recovery Package, also known as the 'Sales Water Reform Package' will recover 145 gigalitres in water savings for a total cost of \$93 million through a package of measures including:
  - regulatory reform to create a new medium-reliability entitlement, and
  - targeted infrastructure measures to provide more sustainable and efficient irrigation water supply systems, including the reconfiguration of irrigation distribution systems.

The Lake Mokoan Study examined the feasibility of achieving water savings from changing Lake Mokoan through either:

- reverting the lake back to the original natural wetlands

- reducing the size of lake by constructing a partition and operating the lake under existing rules, or
- reducing the size of the lake and operating it as an annual water storage facility.

The study considered each option in terms of the relevant socio-economic uses and impacts on the local and wider community, and the effects on the environment in the immediate vicinity and elsewhere. A benefit-cost analysis was then prepared for each water saving option.

**Development of the Lake Mokoan Recovery Package involved extensive community engagement and consultation through the Lake Mokoan Study. A consultation process was established to ensure local knowledge was incorporated in the process and that the full range of issues and perspectives was considered in refining and evaluating options for the future of the lake.**

Similarly, the Goulburn-Murray Water Recovery Package was developed after the Victorian Government, in consultation with the community, considered several methods for recovering water for environmental outcomes, namely, capturing on-farm savings, changing system management and allowing donations, buying water, and contributions from water users.

The Goulburn-Murray Water Recovery Package was agreed upon following extensive consultation with key stakeholders in the Goulburn-Murray region, including: the Victorian Farmers' Federation; the Australian Conservation Foundation; Environment Victoria; and Goulburn-Murray Water.

## Discussion and Assessment

The Victorian Government decided to undertake the Goulburn-Murray, and Lake Mokoan Water Recovery Projects following extensive investigations and public consultation.

The Commission is satisfied that Victoria has given due regard to COAG water recovery principles when designing the Goulburn-Murray, and Lake Mokoan Water Recovery Projects. The Commission is also satisfied that the detailed investigations undertaken to develop both packages involved extensive consultation with affected stakeholders and the broader community.

On the basis of the above discussion, the Commission considers that Victoria is making satisfactory progress towards meeting its COAG commitment in this area.

## 3.6 Water Resource Accounting

### 3.6.1 Benchmarking of accounting systems

#### Assessment Issue

The Commission is looking for Victoria to be actively engaged in the national benchmarking of jurisdictional water accounting systems by June 2005, to allow for the development of a national framework for comparison of water accounting systems to encourage continuous improvement leading to the adoption of best practice.

Victoria is involved in a national process to benchmark water accounting systems. Through this process, Victoria has committed to provide full access to their existing water accounting and entitlement registry systems and to other relevant water databases.

#### Discussion and Assessment

The Commission considers that Victoria is satisfactorily progressing its COAG commitment to benchmark existing water accounting systems.

### 3.6.2 Consolidated Water Accounts

#### Assessment Issue

Victoria is to identify situations where close interaction between groundwater aquifers and streamflow exist by the end of 2005, to support the integration of accounting for groundwater and surface water use.

Victoria has identified the upper reaches of the Ovens River valley and the upper Moorabool River valley as areas where there is significant interaction between surface and groundwater. The identification of groundwater dependent ecosystems and the technical review of surface water and groundwater interactions is scheduled for completion by the end of 2006.

Victoria has advised that, in June 2005, it released its first statewide water accounts, *The State Water Report 2003–2004: a statement of Victorian water resources*. The

document reports on Victoria's water resource availability, allocation and use for surface water, groundwater and recycled water in each of Victoria's 29 river basins. It also identifies emerging trends.

Each basin section provides a map showing location of significant water resources, management responsibilities, an overview of seasonal conditions affecting water resource availability and use, and the volume of total water resources available and used for its environmental water reserve, surface water, groundwater and recycled water.

Victoria has achieved agreement from the state's water authorities to have one register for the state and common methods for transfer of water shares and allocations. The central register will help streamline and improve future water accounts.

#### Discussion and Assessment

Although slightly behind the COAG schedule, the Commission notes that Victoria is making progress toward identifying situations of significant interaction between groundwater and surface water. The Commission also notes that Victoria is making significant progress in developing robust water accounting arrangements and is engaged in a national process to develop accounting system standards and guidelines.

The Commission considers Victoria has made significant progress towards meeting its COAG commitments to consolidated water accounts.

### 3.6.3 Environmental Water Accounting

#### Assessment Issue

The Commission is looking for Victoria to have commenced the development of:

- a compatible register of new and existing environmental water, showing all relevant details of source, location, volume, security, use, environmental outcomes sought, and type, and
- annual reporting arrangements to include reporting on the environmental water rules, whether or not they were activated in a particular year, the extent to which rules were implemented and the overall effectiveness of the use

of resources in the context of the environmental and other public benefit outcomes sought and achieved.

**Victoria's water register that is currently under development (for commencement in 2006–07) will include requirements for environmental water accounting and ensure environmental water can be analysed and reported by individual owner, source, trading zone, reliability and allocations issued, used or transferred. The accounting system will use double entry accounting and provide a transaction-based audit trail that can be independently audited.**

**Victoria is also engaged in the national process to develop and adopt characteristics for compatible environmental water registers and principles for environmental water accounting.**

## Discussion and Assessment

**The Commission considers that Victoria is satisfactorily progressing its COAG commitment to environmental water accounting.**

### 3.6.4 Reporting

#### Assessment Issue

The Commission expects Victoria to be engaged in a process to develop national guidelines covering the application, scale, detail and frequency for open reporting, addressing:

- metered water use and associated compliance and enforcement actions
- trade outcomes
- environmental water releases and management actions, and
- availability of water access entitlements against the rules for availability and use.

**Water accounting and reporting are modules in the design of Victoria's new water register. Victoria is currently participating in the national process to develop national water accounting and reporting guidelines.**

## Discussion and Assessment

**The Commission considers that Victoria is satisfactorily progressing its COAG commitment to developing national guidelines for reporting water use and management information.**

### 3.7 Urban Water

#### 3.7.1 Demand Management

##### Assessment Issues

The Commission will assess:

- whether Victoria has implemented the Water Efficiency Labelling and Standards Scheme, including mandatory labelling and minimum standards for agreed appliances, and are undertaking compliance monitoring; and
- the extent to which the implementation of the Water Efficiency Labelling and Standards Scheme has been actively communicated to consumers.

The Commission will also look for Victoria to report on progress with the review of water restrictions and the implementation of management responses to supply and discharge system losses.

**The Victorian *Water Efficiency Labelling and Standards Act 2005* has been used as a model by other states and territories.**

**Victorian water authorities with urban supply systems are required to develop and implement programmes for reducing leakage and minimising other losses of water from their works to an economically sustainable level. This requirement is set out in the authorities' statements of commitments.**

## Discussion and Assessment

**The Commission considers that Victoria has played a key role in the development of the Water Efficiency Labelling and Standards Scheme and has therefore met its COAG commitments in this area. The review of water restrictions and the implementation of management responses to supply and discharge system losses are ongoing actions and will be subject to further monitoring by the Commission.**

### 3.7.2 Innovation and Capacity Building to Create Water Sensitive Australian Cities

#### Assessment Issues

The Commission will assess whether Victoria has:

- developed and applied national health and environmental guidelines for recycled water and stormwater
- commenced a process to evaluate existing 'icon' water sensitive urban developments to identify knowledge gaps and lessons for future strategically located developments, and
- undertaken adequate public consultation and education as part of these commitments.

#### Recycled Water and Stormwater Guidelines

Victoria reported that its Environment Protection Authority updated guidance on reclaimed water in June 2003 when the guidelines for environmental management use of reclaimed water were released. These guidelines were endorsed by the Victorian Departments of Human Services, Environment and Sustainability, and Primary Industries. These guidelines are actively implemented within Victoria through a range of statutory requirements and policies and adopt the approaches described in the *National Water Quality Management Strategy (NWQMS) Guidelines for Sewerage Systems – Reclaimed Water* (ANZECC & ARMCANZ, 2000b) but with 'higher order' practices to better reflect the environmental and regulatory framework in Victoria.

The Environment Protection Authority also released draft *Guidelines for Environmental Management: Dual pipe recycling schemes: health and environmental risk management* (EPA Victoria, 2005) for public consultation in May 2005. The draft guidelines complement the existing guidelines but provide specific guidance on the management of dual pipe recycling schemes. The draft guidelines have been developed through broad consultation with stakeholders and will be endorsed by the Department of Human Services. The draft guidelines are being implemented for dual pipe schemes that are currently under development in Victoria.

#### Evaluation Process – 'icon' Water Sensitive Urban Developments

Victoria reviewed icon development in Melbourne in consultation with developers, water authorities and local government stakeholders, as part of the development of *Our Water Our Future*. This review informed a number of the reforms articulated in *Our Water Our Future* as part of the implementation of the policy of sustainable urban water management.

Regarding the identification of knowledge gaps and capacity building, over the last four years the Environment Protection Authority has administered the \$22 million Victorian Stormwater Action Program aimed at:

- assisting local government in the development of stormwater management plans to improve the quality of urban stormwater runoff
- investing in priority and innovative stormwater tasks
- investing in knowledge and best practice guidelines, and
- capacity building programmes developed through the Clearwater Initiative, a collaboration with the Municipal Association of Victoria.

#### Public Consultation and Education

As discussed above, the draft guidelines for dual pipe schemes were released for public consultation earlier this year. The Environment Protection Authority was involved in a broad consultation programme that focused on key stakeholders—including the water industry, key government agencies and the housing development industry—through their membership of a steering committee and technical working groups.

In accordance with the guidelines for reclaimed water and the draft guidelines for dual pipe schemes, recycled water suppliers are responsible for ensuring that users (including the community) are aware of the requirements for using recycled water. The draft guidelines include guidance for developing a communications strategy to engage with the community.

#### Discussion and Assessment

The Commission notes that Victoria has commenced a process to evaluate existing 'icon' water sensitive urban

developments. The Commission considers that Victoria is satisfactorily progressing its COAG commitments in relation to innovation and capacity building for water sensitive cities area.

### 3.8 Community Partnership and Adjustment

#### Assessment Issue

The Commission will be examining Victoria's public consultation and education arrangements for consistency with its COAG obligations, for all aspects of the COAG water reform agenda. Particular assessment items are identified under each relevant section of this assessment framework.

With regard to addressing adjustment issues, the Commission will be looking for Victoria to demonstrate its commitment to close engagement with affected parties on possible responses, including consideration of, at least, the factors outlined in paragraph 97(i) of the National Water Initiative.

#### Public Consultation and Education Arrangements

Victoria has consulted publicly on a range of water reform matters. Previous sections of this assessment detail Victoria's consultation and education initiatives in relation to water resource planning, water pricing, environmental water and urban water. In summary:

- Extensive community consultation was undertaken as part of Victoria's Green Paper (in preparation for *Our Water Our Future*) regarding water allocation in stressed rivers. This process was reported on in the 2004 National Competition Policy assessment and was found to be suitable.
- As part of the new sustainable water allocation framework for long-term water resource planning, decisions on the management of the Environmental Water Reserve are negotiated through consultation with stakeholders in recognition of increasing demands for consumptive uses of water.
- The Commission understands that Victoria is committed to annually reporting on the State's water resources. For example, in June 2005 the Victorian Government released *The State Water Report 2003-2004: a statement of Victorian water resources*, which consisted of the

State Water Inventory and State Water Accounts.

Catchment Management Authorities must report on the environmental water reserve in their area through the Water Accounts.

- Victoria's Essential Services Commission made its first pricing decision for Victoria's 17 urban water authorities in June 2005. The decision followed an 18 month open review process, which included extensive consultation with water authorities, consideration of issues raised in submissions and comments at public forums.

#### Adjustment Issues

Victoria reports that *Our Water Our Future* outlines the Government's policy for the reconfiguration of irrigation services. Reconfiguration of irrigation schemes (usually only parts of these schemes) is a key action to improve the efficiency of water delivery and, in doing so, make additional water available for the environment. Key to this is a reconfiguration plan prepared by water authorities, in consultation with users, for approval by the Minister for Water. As an example, a reconfiguration plan is currently being prepared for the Pyramid Boort Region.

Victoria's *Water (Resource Management) Act 2005* requires the minister to establish directions for consultation in the water resource planning processes and, where needed, when compensation is required arising from reconfiguration plans that lead to on-farm water entitlement adjustments.

#### Discussion and Assessment

There are a number of avenues through which community consultation and associated education processes for water management occur in Victoria.

Victoria's *Water (Resource Management) Act 2005* requires the minister to establish directions for consultation when compensation is required arising from reconfiguration plans that lead to on-farm water entitlement adjustments. The Commission will continue to monitor Victorian Government policy and practice in this area to ensure ongoing engagement with stakeholders and consideration of adjustment assistance where relevant.

The Commission considers that Victoria has made satisfactory progress towards meeting its COAG commitment in this area.

### 3.9 National Water Quality Management Strategy

#### Assessment Issues

The Commission is looking for the Victorian Government to demonstrate continued and active implementation of the NWQMS. In undertaking this assessment, the Commission will be guided by the expectations identified in the 2001 paper on implementation and the approach taken in previous NCP assessments. The Commission will consider the extent to which the implementation of other water reform commitments recognises and gives effect to the NWQMS. This 2005 NCP assessment will consider Victoria's implementation of guidelines that have been finalised since the last assessment.

#### Implementation

In 2001 Victoria agreed to a two-yearly review of its implementation of NWQMS guidelines and the 2003 National Competition Policy assessment examined Victoria's progress in accordance with this timeframe. The 2003 National Competition Policy assessment found that for the most part, Victoria was making satisfactory progress in implementing policies that reflect a consistent and systematic approach to the NWQMS.

Since the 2003 National Competition Policy assessment, the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (ANZECC & ARMCANZ, 2000a) has been revised and the guidelines on biosolids management and sewerage systems overflow have been completed.

Victoria has continued to implement the key elements of the NWQMS through a range of mechanisms:

- the Victorian River Health Strategy—this provides an integrated framework for managing river health to achieve ecologically healthy rivers that are managed within healthy catchments
- regional catchment strategies, regional river health strategies, water quality action plans—regional river health strategies are the key tool for managing water quality across Victoria. Through these, Catchment Management Authorities identify the environmental, social and economic values of water, and in consultation with the community, set priorities for water quality

management in water quality related plans and programmes, and

- the revised State Environmental Protection Policy (Waters of Victoria) 2003—this sets environmental quality objectives that inform; water quality and biological requirements for ecologically healthy rivers, and protection of various environmental, economic and social assets. This policy recognises the water quality management targets set in regional catchment strategies.

Victoria has developed the RiVERS Assets Register, which draws on the environmental values in the NWQMS as well as social and economic assets identified by the Catchment Management Authorities for incorporation into the regional river health strategies. Supporting the regional river health strategies are a number of additional supporting, specific issue plans developed by the Catchment Management Authorities as part of a three-year rolling regional activity plan which identifies activities to be funded in that period.

Victoria has a number of frameworks for monitoring water quality, including:

- the Victorian Water Quality and Quantity Monitoring Network
- the Index of Stream Condition, and
- the Catchment Condition Indicators project, reported by the Victorian Catchment Management Council.

Victoria has noted that there have been several improvements to the methodology to improve the accuracy and robustness of the Index of Stream Condition. The Index is used to benchmark the condition of rivers and streams, assess the long-term effectiveness of interventions, and help set condition objectives.

#### Development and Implementation of Risk-based Environmental Objectives for Catchments

Victoria's management approach, through the Victorian River Health Strategy, is based on four key elements:

- protecting the rivers that are of highest community value from any decline in condition
- maintaining the condition of ecologically healthy rivers
- achieving an 'overall improvement' in the environmental condition of the remainder of the state's rivers, and
- preventing damage from future management activities.



A risk-based assessment is used to determine the threats to the identified assets and priority waters, identified by Catchment Management Authorities in the regional river health strategies using the RiVERS register as a decision support tool. The assessment determines the threats of most significance and thus those requiring management actions to be undertaken. This approach is consistent with the principles of the *Victorian River Health Strategy*. The Victorian Government considers it to be up-to-date with regard to catchment and water management.

#### Development of Catchment-based Nutrient and Water Quality Plans

In the past, there was no one plan that encompassed all water quality issues and projects, or that articulated the integrated water quality targets that various plans aimed to achieve. Victoria considers that it now takes an integrated approach to the management of nutrients and water quality issues at the catchment level.

Through the *Victorian River Health Strategy*, Catchment Management Authorities will be required to develop a number of sub-strategies to support their regional river health strategy. One of these is the catchment water quality action plan, which will encompass actions to deal with nutrients, salinity (if not covered by a separate plan) and other water quality issues. These plans will be developed by the Catchment Management Authorities in consultation with key stakeholders and regional communities.

#### Refinement of Victoria's Water Quality Monitoring Arrangements

From 1 March 2005, water quality monitoring that was previously conducted by a number of agencies across the state has been integrated through the establishment of regional water resource monitoring partnerships. These partnerships have been established for the Gippsland, North East, North West and South West regions.

The Victorian Government is of the view that these monitoring partnerships will deliver a number of benefits including:

- ensuring a secure source of funds
- a coordinated approach to water resource monitoring
- well defined transparent cost-sharing arrangements

- regional ownership and control
- contracts for monitoring services
- long data record at important sites
- flexibility to add, remove or augment monitoring services as needs change
- consistent quality control and quality assurance procedures across the state
- documented methods, and
- data freely available over the Internet.

In the future, Victoria plans to conduct a review of the monitoring network design and undertake either a rationalisation or expansion of the network design as necessary.

#### Implementation of Frameworks to Control Point and Diffuse Source Pollution

Control of point and diffuse source pollution in waterways for surface water is managed through the State *Environmental Protection Policy (Waters of Victoria) 2003*, which is subordinate legislation under the *Environment Protection Act 1970*.

Point source pollution of Victorian waterways is controlled by the Victorian Environment Protection Authority. With the aim of preventing pollution and protecting the environment to the levels required by State Environment Protection Policies, it does this mostly through a range of regulatory mechanisms. These measures are based upon the 'polluter-pays principle' and licensing. The licence to pollute is a legally binding agreement that controls key operating conditions and the wastes that may be discharged.

Diffuse pollution of Victorian waterways is controlled through a range of frameworks including:

- urban stormwater best practice environmental management guidelines
- landuse planning
- best management practices, and
- strategies and frameworks prepared by Catchment Management Authorities addressing integrated catchment management.

The State Environmental Protection Policy was updated in June 2003 to reflect current scientific knowledge and approaches and Victoria's catchment management arrangements. Schedules to this policy provide special measures for sensitive areas such as Western Port, the Gippsland Lakes and Port Phillip Bay.

### Discussion and Assessment

Victoria has demonstrated continued implementation of the key elements of the NWQMS. This is established through the frameworks prescribed in the *Victorian River Health Strategy* and the activities underway that implement this framework.

Victoria has developed and implemented risk-based environmental objectives, which are based on key threats for each catchment identified through the RiVERS support tool. This process is in line with the management principles identified in the *Victorian River Health Strategy*.

The regional river health strategies developed for each Catchment Management Authority provide management priorities that form the basis of water quality plans in each catchment. These strategies integrate the water quality objectives that were previously found over a number of different plans.

The Victorian Government refined its administrative arrangements for water quality monitoring in early 2005. Additionally, any changes to the monitoring network design can be applied through regional monitoring partnerships consistently across the state, if required in the future.

Victoria is implementing various frameworks to control both point source and diffuse source pollution in its waterways. The main management tool for these frameworks is the *State Environmental Protection Policy (Waters of Victoria) 2003*, which has recently been updated to include adaptive management processes.

The Commission is of the view that the NWQMS has been incorporated into Victoria's water planning processes. The approach taken is generally in accordance with the key elements outlined in Appendix B of the *Water Reform Assessment Framework 2005* (NWC, 2005a).

Overall, the Commission considers that Victoria has met its COAG commitments in this area.

# QUEENSLAND 4



## QUEENSLAND

### 4.1 Implementation

#### Assessment Issues

The Commission is looking for Queensland, as a signatory to the National Water Initiative, to:

- have completed its National Water Initiative Implementation Plan
- where cross-jurisdictional water sharing agreements exist, have commenced a review of existing agreements to ensure their consistency with the National Water Initiative and identify those instances where any new agreements may be required, and
- for Murray-Darling Basin jurisdictions, have commenced a process to review the 1992 Murray-Darling Basin Agreement for consistency with the National Water Initiative.

Queensland provided the Commission with a draft implementation plan on 14 June 2005. This draft was assessed by the Commission and comments were given back to Queensland on how the implementation plan could be improved for it to be considered for accreditation.

At the time of this National Competition Policy assessment, the Commission expects to receive a finalised implementation plan from Queensland in early 2006.

Queensland is currently a signatory to three cross-jurisdictional water sharing arrangements: the 1992 Murray-Darling Basin Agreement (MDBC, 1992); the Border Rivers Intergovernmental Agreement; and the Lake Eyre Basin Agreement.

The review process for the 1992 Murray-Darling Basin Agreement has not commenced. Signatories to this agreement include the Australian, New South Wales, Victorian, South Australian, Australian Capital Territory and Queensland governments.

The Border Rivers Intergovernmental Agreement has existed since 1946. This agreement was ratified by the *New South Wales–Queensland Border Rivers Act (QLD 1946, NSW 1947)* and relates to the construction of dams and weirs on parts of the Border Rivers, and the sharing of water between the states. A new formal agreement is expected to be finalised by 2006. In the interim, both New South Wales and Queensland have agreed to implement a number of initiatives that build on water management in the area.

Queensland is a signatory to the Lake Eyre Basin Agreement with the Australian and South Australian governments.

This agreement was signed in 2000 and is currently being reviewed in accordance with a commitment that it be reviewed after five years. The Australian Government is currently drafting the terms of reference for the review, which will be consistent with the National Water Initiative (COAG, 2004a). The review is due to be completed in early 2006.

There is no formal agreement for the joint management of the Great Artesian Basin's groundwater resources; however, Queensland is represented on the Great Artesian Basin Coordinating Committee, along with the Australian, South Australian, New South Wales and Northern Territory governments and stakeholders, to improve resource management in the basin. A decision has been made to review the strategic management plan; consistency with the National Water Initiative will be part of the review.

#### Submissions

The Commission received submissions that raised issues on Queensland's timing and adequacy of water planning, such as those from East End Mine Action Group and the Queensland Farmers' Federation. These issues will be raised in more detail in the following sections of this report that relate to the topics of concern.

#### Discussion and Assessment

The timetable for Queensland to complete an implementation plan and have it assessed and accredited by the National Water Commission has been revised. The National Water Commission is expected to consider plans for accreditation early in 2006.

The Commission is concerned about the length of time being taken to finalise the new Border Rivers Intergovernmental Agreement. Until this agreement has been finalised, Queensland will not be able to meet its COAG commitments for water access entitlements and trading in this area. The Commission expects issues in this area to be resolved promptly by the two governments. A review of the Lake Eyre Basin Agreement is also being undertaken. The review will address consistency with the National Water Initiative.

The Commission notes that Queensland is participating in national processes under the National Water Initiative to carry out water reform activities both within the state and across jurisdictions, within agreed timeframes, to improve water resource management.

Overall, the Commission considers that Queensland is making satisfactory progress against its COAG commitments in this area.

## 4.2 Water Access Entitlements and Planning Framework

### 4.2.1 Water Access Entitlements

#### Assessment Issues

The Commission is seeking detailed information from Queensland with regard to its current arrangements for the provision of water access entitlements. The Commission will be looking for Queensland to:

- have completed the conversion of water access entitlements to entitlement systems in line with the principles and timeframes of its 1994 Water Reform Framework commitment
- demonstrate the commencement of incorporation of the National Water Initiative water access entitlement requirements into its legislative and administrative regimes, and to have taken steps to ensure its water access entitlements are consistent with the National Water Initiative access entitlement framework
- have made significant progress in the development of compatible, publicly accessible systems for registering water access entitlements and trades, including recognition of third party interests (such as the interests of financial institutions)
- have completed (or nearing completion of) the 13 resource operations plans identified for completion in its 2004 National Competition Policy report, and have made demonstrable progress in the development of the six remaining resource operations plans, and
- report on the public consultation and education processes in place for the introduction or review of entitlement regimes.

The Queensland Government has legislated to establish systems of water entitlements under the provisions of the *Water Act 2000*.

Under the *Water Act 2000*, water resources in Queensland are to be allocated as water allocations; water resources were previously allocated under the *Water Resources Act 1989* as water licences. The conversion of licences to allocations is occurring through the water resource plan and resource operations plan processes (under the Act).

Water resource plans specify the rules for water allocation, water entitlement security objectives, and environmental flow provisions. Resource operations plans give practical effect to the objectives of the water resource plans.

They generally contain details on the conversion of existing licences to the new system, the granting of new entitlements, the operation of water infrastructure, the rules for trading and the requirements for water and ecosystem monitoring and reporting.

#### Water Licences

As mentioned previously, water licences were the pre-existing system of authorising consumptive water use in Queensland under the *Water Resources Act 1989*. Water licences are generally attached to land and cannot be permanently traded as separate entitlements from the land. They specify the owner of the licence and the purpose of use. Water licences are granted for a specific time period, specify the water to which the licence relates (either as a volume, area or flow regime) and may also include certain conditions for accessing water.

Water licences remain current in unregulated areas until the commencement of a resource operations plan, at which time they are converted to a water allocation. Water licences will continue in areas that will not be covered by a resource operations plan, or where the resource operations plan does not provide for the establishment of water allocations. Queensland intends to amend water licences over time to describe the entitlement in volumetric terms.

#### Licence Arrangements for Infrastructure Operators

Under the *Water Act 2000*, water supply scheme operators are required to hold an interim resource operations licence for the control and management of water controlled by a

dam in areas where a resource operations plan has not been approved. These licences specify who the water is to be distributed to, and any conditions that may apply.

Under the *Water Act 2000*, holders of an interim resource operations licence are granted a resource operations licence on approval of a resource operations plan, for the control and management of water controlled by a dam in that plan area. A resource operations licence includes operating rules to ensure certain supply requirements and environmental flows are met, as consistent with the objectives of the water resource plan and resource operations plan.

In catchments where a water supply scheme operator needs to utilise the infrastructure of another body to distribute water to its customers, the owner of the additional infrastructure is required to hold a distribution operations licence.

#### Interim Water Allocations

An authority to take water in a regulated area under an interim resource operations licence is termed an interim water allocation. Interim water allocations represent the maximum amount of water that can be taken in a water year, although the actual amount taken varies on the basis of water availability.

As with water licences, interim water allocations are generally attached to land and cannot be permanently traded separately from land. They specify the owner of the entitlement and the purpose of use. These allocations are usually held by the customers of the scheme; however, they can be held by the scheme operator. These remain current until the approval of a resource operations plan, at which time they are converted to a water allocation.

#### Water Allocations

Provided for under the *Water Act 2000*, water allocations are separate from land title, are tradeable, and clearly specified in terms of their ownership, location and nominal volume (which is subject to an annually announced allocation percentage).

Under the *Water Act 2000*, water allocations stipulate many characteristics, including (but not limited to):

- details of the holder and how the allocation is held

- a nominal volume for the allocation
- the location and purpose for taking water
- the resource operations plan under which the water allocation is managed
- the flow conditions under which water may be taken, and
- the volumetric limit.

Water allocations are granted to the holders of expired water licences when a resource operations plan is approved and take effect on the day that the plan is approved. Water licences are recorded on Queensland's Water Allocation Register (discussed below). The holder of a water allocation has exclusive title; however, a water allocation may be forfeited if the holder is convicted of an offence under the *Water Act 2000*.

Interests and dealings in water allocations, including transfers and leases, are registered on the Water Allocations Register—this is similar to the way dealings in land may be registered under Queensland's *Land Title Act 1994*. Amalgamations or subdivisions of water allocations are permitted under the *Water Act 2000* but, to be approved, they must comply with the relevant resource operations plan and they must not result in an increase in the holder's water allocation.

Water allocation holders in regulated systems must hold a supply contract with the resource operations licence holder for supply of the water entitlement. Someone that does not reside within the system who is interested in investing in water must first apply for a supply contract before they can buy an entitlement. This issue is discussed further in Section 4.3 on Water Markets and Trading.

#### Groundwater

An authorisation under the *Water Act 2000* is required to take artesian water for all purposes, including stock and domestic use.

Under the *Water Act 2000*, subartesian groundwater may be taken without a licence, regardless of purpose—unless there is a moratorium on groundwater development, a subartesian area is declared under a regulation, or access is limited by a water resource plan and associated resource operations plan. To date, only the *Barron Water Resource Plan* (DNR, 2002a) deals with subartesian groundwater,

albeit as a licensing regime rather than establishing tradeable water allocations. The Pioneer and Burnett plans are being amended to provide for trading of subartesian groundwater entitlements for the first time in the state. No water resource plans are being developed specifically for subartesian aquifers.

#### Conversion of Water Access Entitlements

In Queensland, the water management planning process entails the preparation of water resource plans, which are developed under the *Water Act 2000* as subordinate legislation. The *Water Act 2000* provides a process by which the plans are implemented and individual licences are converted to tradeable water allocations through implementation plans known as resource operations plans. Resource operations plans give practical effect to the security objectives for water allocations and flow objectives for the environment specified in the water resource plan. Once the resource operations plan is approved, existing water licences in the plan area are converted to water allocations.

In its 1999 implementation programme, Queensland identified 20 systems that required development of a plan for water resource management, and consequent entitlement conversion. Since 1999, Queensland has identified three additional systems requiring planning.

At the time of this 2005 National Competition Policy assessment, 11 of the 23 identified plan areas within Queensland have a completed water resource plan. Five of these plans are currently being implemented through finalised resource operations plans and so the water allocation conversion process is complete in these areas. Queensland's water planning progress is discussed further in Section 4.2.3 on Water Planning and Addressing Currently Overallocated and/ or Overused Systems.

In accordance with Queensland's current timetable for implementing water resource plans and resource operations plans across the state, it is anticipated that the conversion of all entitlements to water allocations will be completed by 2009. Queensland acknowledges that this timeline may be extended if more time is needed for public consultation and hydrologic studies.

#### Compatible Entitlement Register

On conversion from existing entitlements, water allocations are registered on the Queensland Water Allocations Register. The register is maintained by the Queensland Bureau of Land Information and Titles as an adjunct service provided by the Department of Natural Resources and Mines, and is accessible to the public through any office of the Department of Natural Resources and Mines for a prescribed fee. Queensland considers that the register provides an accurate, secure system for centrally recording the ownership of, and interests and dealings in, water allocations.

The Water Allocations Register was created under the *Water Act 2000* for registering all details on water allocations. These details include information on dealings with water allocations such as temporary and permanent trades, and third-party interests. Interests and dealings in a water allocation are enforceable once they are registered on the Water Allocations Register.

The register includes details of the ownership of all water allocations and the attributes of the water allocations, including the nominal volume and any conditions that apply. The process for validating the data involves publishing all water allocations to be created from existing licences in a draft resource operations plan for a system and relying on licence holders to check the accuracy of their own details.

The register allows for the recording of interests in water allocations, in the same way as interests may be recorded on land title. Accordingly, a third party with an interest in a water allocation may register a mortgage or caveat over the allocation. Persons with an interest in the converted entitlement (or the land to which it was attached) have the opportunity to notify their intention to register an interest on creation of the water allocation.

Queensland is participating in the development of nationally compatible registers for water access entitlements through an inter-governmental committee under the Natural Resource Management Ministerial Council. See Section 4.3 on Water Markets and Trading.

### Public Consultation and Education

During the water planning process for different systems in Queensland, a Community Reference Panel is set up to deal with specific issues relating to water planning in the particular plan area. The panel comprises representatives of cultural, economic and environmental interests, as required under the *Water Act 2000*. Queensland has stated that currently about 90 per cent of the area of the state is covered by water planning processes, at different stages of completion of water resource and resource operations plans.

Queensland has also stated that public consultation and education about water entitlements and conversion of licences to water allocations occurs in association with the development of water resource plans and resource operation plans for each catchment. For example, water entitlements and licence conversions are discussed:

- with community reference panels
- during general community meetings and information sessions, and
- upon release of a draft water resource plan or draft resource operations plan.

Fact sheets and contact details for public enquiries are provided on the Department of Natural Resources and Mines' website to assist public understanding of the entitlement arrangements.

### Discussion and Assessment

As considered in the 2004 National Competition Policy assessment (NCC, 2004b), Queensland's *Water Act 2000* establishes a comprehensive system of water entitlements that are separated from land title, specified in volumetric terms and issued in perpetuity.

Queensland water licences remain tied to land and are not defined in terms of available volumes until they are converted to water allocation on finalisation of a resource operations plan. As such, the conversion timeframes are linked to the rollout of these plans across the state. At the time of this 2005 National Competition Policy assessment, Queensland had finalised resource operations plans in five of the 23 plan areas across the state.

Through the current register that is in place and the

involvement in a cross-jurisdictional working group for developing compatible registers for entitlements and trades, the Commission considers that Queensland is making good progress towards its COAG commitment of full implementation of a compatible, publicly accessible and reliable register for all water access entitlements and trades by 2006.

Queensland has taken steps to incorporate water access entitlement requirements into its legislative and administrative regimes, as specified in the National Water Initiative water access entitlement framework. Amendments have been made to relevant legislation, in particular the *Water Act 2000*, which provides for water allocations in line with the water access entitlements framework. These are being administered by the Department of Natural Resources and Mines and are registered on Queensland's Water Allocations Register.

Queensland has reported on the public consultation and education processes in place for the introduction or review of entitlement regimes. The majority of this is carried out during the consultation on water resource plans and resource operations plans, which is occurring in around 90 per cent of the state. Consultation is required to involve representatives from cultural, environmental and commercial stakeholder groups.

The Commission is satisfied that Queensland's legislative arrangements meet COAG commitments for water access entitlements.

Queensland has not met its COAG commitments under the 1994 COAG Water Reform Framework for completing licence conversion across the state. The process of converting existing licences to new water entitlements (after completing water resource plans and resource operations plans) is a sound basis for initiating new water allocations in a water system. Nevertheless, the Commission considers that any further delays in the rollout of water resource plans and resource operations plans and the consequent conversion of water licences could seriously undermine the reform goals of improved water access entitlements in that state. See Section 4.2.3 on Water Planning and Addressing Currently Overallocated and/ or Over Used Systems for more discussion on this issue.



Overall, the Commission considers that Queensland has made some progress towards its COAG commitment against this item.

## 4.2.2 Environmental and Other Public Benefit Outcomes

### Assessment Issues

The Commission is looking for the Queensland Government to have commenced the process to incorporate the National Water Initiative architecture for the provision of water for environmental and other public benefit outcomes into its water entitlement, planning and management arrangements.

Queensland considers that, through the introduction of the *Water Act 2000*, it has provided the legislative framework to deliver sustainable water planning, allocation, management and supply processes and to ensure improved security for water resources.

Water planning processes in Queensland are developed to provide legally protected environmental flows to ensure the health of rivers and groundwater systems.

In Queensland, general ecological objectives for maintaining or improving environmental aspects of a catchment are listed in a water resource plan, which is subordinate legislation under the *Water Act 2000*. Particular environmental management rules (and operating rules for regulated systems) for achieving those objectives are specified in the associated resource operations plan. In this manner, environmental flows are legally provided for, thus ensuring the environment a secure right to the water resource.

Queensland's water planning processes include the development of environmental flow objectives and water allocation security objectives that are addressed in each water resource plan. An environmental flow objective specifies the flow required to protect the health of natural ecosystems (for ecological outcomes). In contrast, a water allocation security objective is a specified (and protected) probability of being able to obtain water in accordance with a water allocation. It is not a water allocation, but it is a performance indicator that is specified in a water resource plan.

Technical advisory panels, community reference panels and water advisory groups are assembled to provide advice and recommendations on issues dealt with in the development of a water resource plan.

Through the development and implementation of water resource plans and resource operations plans, the Queensland Government monitors flow regimes of river systems that maintain the duration, magnitude, variability and seasonality of flow patterns to ensure environmental and public benefit outcomes are achieved.

Most systems in Queensland that are not covered by a finalised water resource plan and a resource operations plan are currently undergoing some sort of water planning process. In these areas, a moratorium is applied, at the time of announcement of an intention to prepare a plan, to maintain the level of water resource development. Queensland is of the view that its rivers are not overallocated.

Queensland does, however, recognise through the *Queensland Water Plan 2005–2010* (Queensland Government, 2005) that some underground water resources are highly stressed because of overuse and related factors such as seawater intrusion. The Bundaberg and Lockyer Valley areas are two examples of this.

The loss of underground water from the Great Artesian Basin through uncapped bores and open bore drains has also increased the stress in these aquifers. This has halted flow in many artesian bores and in about half of the 310 Great Artesian Basin springs areas. Queensland has begun addressing this issue through the Great Artesian Basin Sustainability Initiative, which provides funding to support bore rehabilitation and bore drain piping.

Water resource planning for groundwater, in areas other than the Great Artesian Basin, includes provision of water for the environment. Groundwater is generally integrated into a water resource plan along with surface water when the use of groundwater is threatening the environment and consumptive targets. The planning process for groundwater typically involves independent scientific advice on groundwater dependent ecosystems and their water requirement.

In the case of the *Great Artesian Basin Draft Water Resource Plan* (DNRM, 2005a), where the plan is just for groundwater, provision of water for the environment is one of the key elements. This includes consideration of springs that are dependent on groundwater from the Great Artesian Basin and strategies to protect their flows to support environmental and cultural values associated with these springs.

### Discussion and Assessment

The Commission is satisfied that Queensland has begun incorporating the National Water Initiative architecture for the provision of water for environmental and other public benefit outcomes into its water entitlement, planning and management arrangements.

The planning processes undertaken for surface water provide for a legally secure flow regime for water for environmental and other public benefit outcome requirements. Specific environmental objectives are outlined in a water resource plan and implemented through a flow regime detailed in a resource operations plan.

Although Queensland is of the view that there are no overallocated systems in the state, the Commission is concerned (as noted elsewhere in this report) about the time being taken to finalise water resource and resource operations plans and provide a secure flow regime for the environment.

The Commission is also concerned that Queensland has not demonstrated appropriate measures for providing water for the environment in the state's aquifers. Although there are provisions under the *Water Act 2000* for developing a water resource plan for groundwater resources, this seems to be taking considerable time to implement. In the interim, Queensland does have a number of measures in place to manage groundwater extractions in some areas (through a moratorium or a declaration of an area). These stop further development of the resource pending measures to address the long-term environmental requirements of the aquifer systems.

The Commission notes that Queensland does have a risk process to determine the priority with which systems should undergo water management planning, for surface water and groundwater.

Overall, the Commission considers that Queensland has made some progress against its COAG commitments in this area.

### 4.2.3 Water Planning and Addressing Currently Overallocated and/or Over used Systems

#### Assessment Issues

In considering governments' arrangements for allocating water to the environment, in light of guidance provided by the 1994 COAG Water Reform Framework, the ARMCANZ/ ANZECC National Principles and the National Water Initiative, the Commission will expect Queensland to establish arrangements that:

- are based on the best available science and use strategic and applied research (principles 2 and 11)
- achieve a balance between environmental needs and human use that provides the water needed to achieve the environmental outcomes, while recognising, in systems where there are existing users, the existing rights of those users (principles 1, 4, 5, 6 and 9)
- involve monitoring and adaptive management where the regular assessment of ecosystem health guides water management processes (principle 8), and
- involve stakeholder consultation and transparent processes that are robust, and ensure the timely provision of relevant information to all interested parties (principles 7 and 12).

The Commission will be looking for the Queensland Government to:

- demonstrate how its water management plans (and related arrangements) address the obligations in the 1994 Water Reform Framework and take account of the ARMCANZ/ ANZECC national principles, regarding the provisions of water to the environment
- if the water allocated for environmental purposes for particular river and groundwater sources is significantly different from that recommended by the best available science, demonstrate that this decision is based on a robust examination of the socio-economic evidence and taken in the context of an open and transparent community consultation process that makes explicit the tradeoffs

- demonstrate that an integrated catchment management approach has been adopted for the management of water and that planning processes and administrative arrangements reflect an integrated approach to natural resource management
- demonstrate water allocations in all the river systems and groundwater basins identified in its 1999 implementation programmes is substantially complete
- provide an overview of the public consultation and education processes in place and adopted for water planning and for addressing overallocated and/or stressed resources, and
- report on progress with the determination of overallocated and/or overused systems not covered by the 1999 implementation programmes and the pathways being developed to address them.

The Commission will also be looking for Queensland to demonstrate that it has substantially completed and implemented water resource plans and resource operations plans for the systems covered by its 1999 implementation programme, including the completion of at least the 13 water resource plans identified in 2004.

Additionally, Queensland should show that it has:

- finalised the resource operations plan for the Condamine-Balonne River, in keeping with its 2004 commitment to finalise the plan by June 2005, and
- implemented a process to monitor the impact of using water in accord with the Water Resource Plan for the Condamine-Balonne system, and is committed to appropriate adaptive management should monitoring information indicate that action is needed.

#### Water Planning

The *Water Act 2000* provides the legal basis for Queensland's water planning, allocation and entitlement frameworks, and gives effect to the policies regarding the allocation of water resource plans and resource operations plans to address issues of overallocation.

The *Queensland Water Plan 2005–2010* was published in August 2005 and provides a programme of current and future activities, from planning to management to research, in support of water management in the state.

The plan provides a general framework for sustainably managing Queensland's water resources. The aim of the plan is to outline strategies and actions for meeting future water needs for consumption and the environment, whilst maintaining the state's economic growth.

Water resource plans are the principle planning instruments under the *Water Act 2000* for water resource planning in Queensland. These are catchment-based plans intended to provide security of water access over the state's 23 plan areas. As well as providing secure title for consumptive uses, water resource plans are designed to ensure that sufficient environmental flows are allocated to protect the health of Queensland's rivers, and to restore environmental values where they have been degraded.

Water resource plans include:

- agreed water provisions for consumptive uses such as towns, agriculture and industry
- allocations for environmental flows for the aquatic ecosystem
- strategies for water use efficiency
- provisions for water security, and
- monitoring and reporting requirements.

According to the *Water Act 2000*, overland flow should be included in a water resource plan when there is a threat to ecosystems or consumptive entitlements as a result of water harvesting. Similarly groundwater is recognised in the *Water Act 2000* as needing inclusion in a water resource plan if groundwater extraction would affect surface water entitlements. Therefore, although the *Water Act 2000* does fully recognise the fact that both groundwater and surface water need to be planned jointly, it still allows for separate groundwater plans. The only separate groundwater plan is for the Great Artesian Basin, which is treated as a special case.

Water resource plans can also deal with unallocated water (water that is surplus to current consumptive needs and environmental needs). The plans can contain the principles for the future use of this water, usually through a tender or auction process.

Water resource plans do not contain implementation details. These are contained in resource operations plans, which

provide the detailed rules necessary to implement the water resource plan. These rules are developed in consultation with interest groups and:

- specify operating and management rules for dam owners
- put limits on the water that can be taken without harming the environment
- convert existing entitlements into tradeable water allocations
- specify rules for the trading of water allocations, and
- specifying monitoring of water use and environment targets.

Public consultation is also required during the development of a resource operations plan.

Water resource plans are reviewed after ten years; however, both water resource plans and resource operations plans can be amended at any time to include emerging issues, prior to the required review date of ten years.

Water use plans are more localised plans, authorised under the *Water Act 2000*, to deal with risks to Queensland's water resources. The problems that they address are primarily water quality issues, such as salinisation, rising groundwater levels and soil erosion, but they can also include damage to the riverine environment. While water resource plans deal with the allocation of the resource, water use plans address the application of water. They are intended to address specific problems and are not part of the mainstream water allocation and water planning process.

Land and water management plans are also authorised under the *Water Act 2000* to ensure that irrigation water use practices are sustainable. They are designed for property level management and can be connected to water use plans. Land and water management plans are required for irrigation where trading in water allocations occurs or where new water allocations are purchased or leased (DNRM, 2004a).

There are a number of planning activities now underway in Queensland to meet urban, industrial and rural water supply needs. Regional water supply strategies complement catchment-based water resource plans and identify specific infrastructure requirements for future water supplies.

Regional water supply strategies are currently being developed in south-east Queensland, central Queensland, the Cairns-Atherton Tablelands, and the far north. Two more strategies are planned for the Mackay-Whitsunday and Wide Bay-Burnett areas. The water supply needs will be met through improved use of existing sources and the development of new infrastructure—including new dams and weirs—where required. The *Queensland Water Plan 2005–2010*, which outlines these infrastructure developments, addresses environmental flows. These requirements are stipulated in the catchment based water resource plans.

In addition to the *Water Act 2000*, Queensland has developed the *Wild Rivers Act 2005* for the purpose of preserving the natural values of rivers that have all, or almost all, of their natural values intact. The systems so far identified as potential 'wild rivers' are located mainly in northern Queensland and have experienced very little development. The *Wild Rivers Act 2005* was developed to protect the natural heritage of the rivers while ensuring that existing communities in the catchments remain viable.

#### Groundwater Planning

The recent focus on plans for surface water has triggered significant interest in the allocation of groundwater resources. As a result, Queensland has stated that it realises there is now a need to extend water resource planning to include the Great Artesian Basin and other important groundwater resources.

To date, a draft water resource plan has been released for the Great Artesian Basin, which covers most of inland Queensland. The Queensland Government is also amending the Burnett, Burdekin and *Pioneer Valley Water Resource Plans* to include groundwater.

Queensland has stated that it has a process for determining where integrated groundwater and surface water plans are needed, which incorporates:

- level of groundwater development
- recharge or rising water tables
- water quality issues such as contamination and seawater intrusion
- threats to the aquifer from landuse

- risk to environmental flows, and
- socio-economic pressures.

Systems are ranked in terms of priority based on these factors.

The Burnett Basin and Pioneer Valley are the only coastal areas that Queensland has currently publicly noted as having significant groundwater issues requiring management through the water resource and resource operations plan process.

#### Integrated Catchment Management

As part of the National Action Plan for Salinity and Water Quality and Natural Heritage Trust strategies, the state government is supporting the development of 15 natural resource management plans across Queensland that include water quality and water flow components. In areas bordering the Great Barrier Reef, these plans are also driven by the *Reef Water Quality Protection Plan* (The State of Queensland and the Commonwealth of Australia, 2003). Generally speaking, these plans do not undertake new environmental flow assessments; they use the assessments carried out as part of the water resource plan and resource operations plan processes.

Under the strategies noted above, community-based natural resource management bodies have been established to deliver outcomes in the strategies by developing common regional natural resource management objectives, and promoting and developing complementary planning policies and joint research.

In addition, the *South East Queensland Regional Plan 2005 – 2026* (OUM, 2005b) looks to promote sustainable management of rural production and natural resource areas by protecting them from incompatible development.

#### Provisions for the Environment

Queensland uses the Benchmarking Method to determine the water requirement of the environment in its water planning process (Brigza et al, 2002). It is a top-down approach, whereby flow regimes are compared to those that would have existed in pristine conditions, with consequent estimates made about the likely changes in aquatic ecosystems as a result of these flow regime changes (bottom up methods try to 'build' flow regimes from the

individual requirements of specific groups of organisms). The key to the method is estimating the effects of changes in flow on ecological factors.

This method compares a reach of river to reference reaches that have been subject to varying levels of impact from different water resource developments. The reference reaches are selected to cover a variety of levels of changes in flow regime, and can be within and outside the catchment being studied. These reaches do need to be representative of the catchment. Overall, the method is general and adaptable to different locations with different climate, geomorphological, ecological and human use characteristics.

The Benchmarking Method was developed by Griffith University scientists, who have considerable experience in the development of environmental flow methodologies.

Under this method, a set of key hydrological indicators is selected for each river system (for example, river, wetlands, or estuary). For example, in the Pioneer Valley study, there were 15 key hydrologic indicators in six functional categories—flow volumes, annual variability, seasonality, zero flows, low flows and high flows (DRNM, 2001a).

Next, conceptual models are developed to relate changes in these indicators to changes in riverine ecology and geomorphology. These conceptual models are based on international literature and refined using local studies where possible. For example, the Pioneer Valley study drew on information from both the Burnett and Barron studies, although the Barron (being one of the first applications) used only benchmark sites from within the Barron catchment itself. This implies that the method can be built upon in the sense that the more the method is applied, the greater the number and diversity of reference sites available.

The conceptual models are used to estimate the implications of departures, both positive and negative, from natural flow conditions (as measured by key indicators) on the geomorphology and ecology. These are called risk assessments and they constitute the core of the method. This step uses benchmark sites where the impacts of changes in flow have already been assessed. These sites are desirably within the study catchment, but can also be in other, similar catchments. Limits can then be set on these

flow indicators through the water resource plan to protect aquatic ecosystem health. It is acknowledged that this process is reliant on the best available judgement rather than well-quantified relationships and so the precautionary principle is used when setting the levels of the flow indicators that are likely to lead to environmental risks.

The Benchmarking Method has the following advantages:

- it is designed for basin scale
- it is not reliant on detailed site analysis but takes a broader overview
- local models can be applied if available
- it uses a top-down approach and, therefore, it is more conservative than bottom-up building block type approaches, and
- it is relatively rapid.

The Benchmarking Method has the following limitations:

- there is a high reliance on individual 'expert opinion'
- it assumes that all similar sites respond to change in the same way as the benchmark site
- it is difficult to separate flow effects from other effects, such as climate change and physical interruptions from weirs, and
- it cannot give integrated responses to multiple flow changes.

The method was assessed at a workshop convened by the Cooperative Research Centre for Freshwater Ecology in February 2000 and supported by many scientists who specialise in this field. Proposed monitoring programs for water resource plans will assess the conclusions drawn from the Benchmarking Method.

#### Entitlements

In Queensland, the allocation of water for the environment is provided through flow rules developed for individual catchments through the water resource planning process and specified in resource operations plans. At the time of this 2005 National Competition Policy assessment, environmental flow rules are being realised in five systems within Queensland. This is not in line with the timeframes specified in the 1999 implementation plan.

Queensland has begun a process for converting existing water licences and use rights to water allocations. On conversion, water licences meet the requirements of water access entitlement requirements in the National Water Initiative.

The entitlement conversion process is linked to the rollout of resource operations plans and it is expected to be completed by 2009. At the time of this 2005 National Competition Policy assessment, systems covering about ten per cent of Queensland have converted allocations. This is not in line with the timeframes for the 1994 COAG water reform commitments, nor those agreed to under the 1999 implementation programme.

In Queensland, any use of water, apart from in emergencies<sup>1</sup>, and for stock and domestic purposes, requires an entitlement that specifies the annual volume or rate of take that is permitted for use. Groundwater licences are required, for all uses other than emergencies and stock and domestic, in declared groundwater areas. See Section 4.2.1 on Water Access Entitlements.

**Water Resource Plans and Resource Operations Plans**  
Queensland considers that there are currently no surface water systems identified as overallocated within the state.

According to the *Queensland Water Plan 2005–2010*, water planning activities now cover more than 90 per cent of Queensland with plan areas involving more than 35 catchments.

The 11 completed water resource plans cover about 60 per cent of the state. Only five of these are being implemented through completed resource operations plans, which cover about ten per cent of the state. These include the Barron, Boyne, Burnett, Fitzroy and Pioneer Valley River catchments. Additionally, the *Cooper Creek Water Resource Plan* (DNRM, 2000a) is implemented through rules in the plan. Queensland does not intend to prepare water resource plans for the catchments north of the Mitchell River, on Cape York Peninsular. Queensland anticipates that these catchments will be covered by the *Wild River Act 2005* and have natural flows protected.

<sup>1</sup> Clause 20(2) of the *Water Act 2000* states that, 'A person may take water in an emergency situation, for (a) a public purpose; or (b) fighting a fire destroying, or threatening to destroy, a dwelling house.'

According to Queensland's timetable, the water planning process is due to be completed for all systems by 2009. Queensland has noted that this timeframe may be extended if additional time is required for activities such as technical assessments, consultation or assessment of issues raised for any system.

An update in each system identified as requiring water resource planning in 1999, and in following years, is provided below. These systems are sorted into groups as follows:

- systems looked at in detail in previous National Competition Policy assessments
- systems looked at in detail for the first time in this National Competition Policy assessment
- systems prioritised in the 1999 implementation programme, and
- systems prioritised since the 1999 implementation programme.

For the purposes of assessing Queensland's approach to incorporating the 1994 COAG Water Reform Framework and the ARMCANZ/ANZECC principles into its management arrangements, the Commission examined the Barron River and the Pioneer Valley River in detail for the 2005 National Competition Policy assessment. These systems were selected because an accompanying resource operations plan has been finalised since the last National Competition Policy assessment in 2004.

#### Previous National Competition Policy Assessment

##### *Boyne River*

The *Boyne River Water Resource Plan* (DRNM, 2000b) was finalised in December 2000, and the *Boyne River Resource Operations Plan* (DNRM, 2003a) was finalised in July 2003. A review of this water resource plan is expected to be announced in early 2008.

Additional unregulated water is being made available in the Boyne plan area downstream of Awoonga Dam. This water is being offered through a tender process.

##### *Burnett River*

The original *Burnett Water Resource Plan* (DNRM, 2000c) was finalised in December 2000 and subsequently

implemented through a resource operations plan in May 2003. Since then, further announcements have been made for amendments to both the *Burnett Water Resource Plan* and the associated resource operations plan.

The *Burnett Water Resource Plan* is being amended to incorporate groundwater in the Coastal Burnett Groundwater Area and it should be finalised by early 2007. The *Burnett Basin Resource Operations Plan* (DNRM, 2005b) is being amended to include rules for managing water harvesting from the Burnett River Dam, the Barker Barambah Water Supply Scheme, and the Boyne and Tarong Water Supply Scheme. It is planned to be completed by the end of 2007.

##### *Condamine-Balonne River*

The Condamine-Balonne Water Resource Plan (DNRM, 2004b) was finalised in August 2004 following consultation that began in 1996. At the time of this 2005 National Competition Policy assessment, Queensland expects the resource operations plan to be ready for formal public review and submission by late 2006, and completed by mid 2007. This is not in line with the dates agreed to in 1999, nor the revised dates agreed to in the 2004 National Competition Policy assessment.

Queensland considers that the reasons for the delay mostly arise from the newness of the issues being faced. These include:

- issuing water licences in an unregulated catchment
- conversion of area based and water harvesting licences to volumetric water allocations
- operating rules for a capacity sharing dam, and
- regulation of overland flow.

There have been extensive scientific investigations of the environmental water needs of the Condamine-Balonne system since 1996. The original draft water allocation management plan (the planning tool used before water resource plans) issued in 2000, was criticised by irrigators on the basis of the science it used, while conservation groups criticised the resulting proposed environmental flows. Consequently, the Queensland government commissioned an independent scientific review in 2002 and agreed to include the findings of this review in the new water resource plan.

The water resource plan covers surface water including the collection of water from overland flows. Although the plan does not include groundwater management, Queensland has declared groundwater management areas within the system where further extraction is prohibited and current use is to be regulated.

For the 2004 National Competition Policy assessment, the National Competition Council noted the finding of the independent scientific review that the rivers and wetlands of the Lower Balonne system were in reasonable ecological condition but that the system would deteriorate if the existing infrastructure for extracting water were used to capacity (Cullen et al, 2003). In this regard, the council also noted the review finding that there is likely to be a significant lag between exercising diversions and ecological impacts, and that it is likely that the Lower Balonne has not yet experienced the full impact of current diversions.

As noted in the 2004 National Competition Policy assessment, Queensland has committed to annual reporting after the commencement of the resource operations plan and a special five-year report after the commencement of the water resource plan. It expects to incorporate groundwater during the plan's ten year life. It has also committed to monitor the impacts of water use, in accord with the requirements specified in the water resource plan, and is developing the monitoring program as part of the resource operations plan.

#### *Fitzroy River*

The *Fitzroy Water Resource Plan* (DNRM, 1999) was released in December 1999 and was implemented through the resource operations plan in January 2004.

During development of the *Fitzroy Resource Operations Plan* (DNRM, 2004c), evidence suggested that the capture of overland flow water in the catchment had the potential to impact on the intent of the water resource plan. As such, the water resource plan was amended in July 2005 to regulate the taking of overland flow to restrict the purpose for which overland flow can be captured, and to limit the storage size for capturing overland flow to five megalitres. The resource operations plan will be subsequently amended as well, and although yet to be announced, the review is scheduled to be finalised by mid-2008.

## 2005 National Competition Policy Assessment

### *Barron River*

The *Barron Water Resource Plan* was finalised in December 2002 and was implemented through the *Barron Resource Operations Plan* in June 2005 (DNRM, 2005c). The Barron catchment, for the purposes of this planning, included the Barron River and its tributaries, the upper Mitchell River above Lake Mitchell and the westward flowing Walsh River as far as Flatrock.

The hydrologic modelling for this plan area was carried out through the Integrated Quantity and Quality Model. It is a daily flow model and was used to simulate both natural and scenario flows, and to estimate the changes in flow at various points in the river system as a result of current development, and for proposed developments. The model was originally developed in New South Wales for Australian conditions and has extensive features for including irrigation withdrawals and dam operations.

The model was calibrated on data from 1992–95 in the Barron catchment, although flow data have been recorded on the Barron River since 1915. Once calibrated, the model was used to provide daily flows for the period from 1915 and is expected to give good representation of the flow regime in the channels of the study area.

The environmental conditions within the Barron catchment were assessed out through an environmental investigations study by a Technical Advisory Panel made up of a multi-disciplinary team of experts. As a formal environmental investigations study, it used the Benchmarking Method to:

- provide an overview of the catchment's natural environment
- review the environmental values and significant ecosystems in the catchment
- assess the hydrological impacts of existing developments, and
- assess the impacts of existing development on the catchment's geomorphology and ecology.

The Environmental Investigations Report (DNRM, 2001b) focused on the impacts of current level of development, compared to natural conditions. The study recommended key ecological indicators of flow for use in the Barron



catchment. The indicators are believed to give an adequate measure of low flows, medium-high flows, seasonality, perenniality and intermittency. It provides an estimated level of impact on five ecological compartments. The link between the flow requirements for environmental protection in the water resource plan, and the key indicators from the Panel's report is not clear. In spite of this, the detail in the water resource plan implies considerable effort in defining the environmental flow requirements of this catchment.

The Environmental Investigations Report was followed by the Ecological Implications Report which assessed impacts of three development scenarios, developed earlier in a Condition and Trend Report, on the five aquatic compartments at the 12 sites (DNRM, 2001c). They related to full utilisation of existing entitlements, full utilisation of existing entitlements plus additional Cairns town water from Barron River, and potential development (such as a new dam on the Walsh River plus water harvesting from the Barron River, and additional in-stream storage).

Benchmarking is the key to estimating the ecological and geomorphological impacts of proposed developments. As the Benchmarking Method was first developed in the *Fitzroy Water Resource Plan*, none of the monitoring sites monitored were suitable to use as reference sites in the wet tropics. Consequently, all benchmark sites for the Barron study were located within the Barron catchment itself. Ecological and geomorphological impacts were rated on a five-point scale that ranged from 'no discernable change' to 'very major impact' when compared with natural conditions. Flow-related impacts were also assessed on a five-point scale. Overall, the authors emphasised that, given the uncertainties involved, they have taken a precautionary approach.

The *Barron Water Resource Plan* defines both the general and location-specific ecological outcomes sought from the plan. The general outcomes include goals such as maintain habitats of native plants and animals in watercourses, lakes and springs. These include a requirement that sub-artesian water be allocated and managed to maintain subartesian water contributions to the flow of water in watercourses, lakes and springs and to groundwater dependent ecosystems. There are two specific outcomes: maintaining the flow of materials through the Barron River to its estuary, and protecting the areas of special conservation significance in Flaggly Creek.

The water resource plan contains flow requirements for environmental protection. Both low flow objectives and medium-high flow objectives are described in a series of tables for the various nodes within the catchment.

The *Barron Resource Operations Plan* provides the procedural details for issuing water licences, managing unallocated water, and the rules for utilising the licences. The resource operations plan compares the general ecological outcomes of the water resource plan and the corresponding actions in the resource operations plan. However, it is not always evident how the resource operations plan actions will lead to the achievement of all ecological outcomes in the water resource plan.

The *Barron Resource Operations Plan* details specific monitoring requirements for the catchment. These data are intended over time, to provide an indication of whether the objectives of the water resource plan are being met. If the objectives are not being met, the plans can be amended in the future to improve the flow regime for the system.

Submissions on the *Barron Water Resource Plan* were first invited when the intention to prepare the plan was announced and again on release of the draft plan. Consultation was undertaken with various interest groups for the development of the *Barron Water Resource Plan* through formal reference panels, meetings and information sessions. A similar process was undertaken for the development of the Barron Resource Operations Plan. Additionally, an independent referral panel was established to review the submissions received in the draft resource operations plan prior to the finalisation of the plan.

The *Water Act 2000* requires that a report be prepared to discuss the consultation process for the development of the water resource plan and the issues raised during that process. Although not a statutory requirement, a consultation report was also released for the Barron Resource Operations Plan consultation process.

#### *Pioneer Valley River*

The *Pioneer Valley Water Resource Plan* (DNRM, 2002b) was finalised in December 2002, and was implemented through the Pioneer Valley Resource Operations Plan (DNRM, 2005d) in July 2005. The plan currently covers surface water resources only; however, the Queensland Government announced in June 2003 its intention to amend the water



resource plan to include subartesian groundwater and the surface water of Sandringham and Alligator Creeks.

As with the Barron River catchment, the hydrologic modelling for this plan area was carried out through the Integrated Quantity and Quality Model. The model was calibrated using data from the Pioneer Valley catchment; however, there was no single period when common data were available and so different river reaches were calibrated for different time periods. The modelling assumptions report provides a description of the assumptions behind the modelling but does not describe the calibration or accuracy of the model results.

An assessment of the environmental conditions within the Pioneer Valley catchment was carried out using the benchmarking method. The current status of the river system is described in the environmental conditions report (DNRM, 2001d) and recommendations for management are contained in the *Environmental Flows Performance Measures Report* (DRNM, 2001e).

A Technical Advisory Panel, made up of a multi-disciplinary team of experts, was engaged to conduct environmental investigations and to undertake assessments of the condition of the system in relation to seven ecosystem components and the risks arising from departures from the natural conditions for the key indicators (Arthington et al, 2001).

The risk assessments were carried out using benchmarks established during the Barron and Burnett River catchment studies, as well as during the Pioneer Valley study. However, the actual benchmarks and how they were used to assess impacts is not described. The environmental conditions report fully acknowledges the uncertainties in the risk assessment phase, and calls for more detailed studies to be undertaken as part of the implementation of the water resource plan so that the risk assessment models can be refined for specific streams/reaches.

The *Environmental Flows Performance Measures Report* shows the expected impacts from different components of the flow regime on different sensitive ecosystems. The recommendations of the Technical Advisory Panel are used to design a rationalised suite of indicators for facilitating implementation of effective ecological and geomorphological benefits. The report concludes with priority research topics.

The *Pioneer Valley Water Resource Plan* is structured similarly to the *Barron Water Resource Plan*. It establishes general outcomes to be achieved, such as providing water to support natural ecosystems, as well as ecological outcomes to be achieved.

The water resource plan identifies indicators of low flow, medium-high flows and seasonality flows that are to be used for management. These indicators correspond to those used in the scientific reports.

The *Pioneer Valley Resource Operations Plan* provides the procedural details for issuing water licences, managing unallocated water, and the rules for utilising the licences. As with the *Barron Resource Operations Plan*, the plan compares the general ecological outcomes of the water resource plan and the corresponding actions in the resource operations plan. However, it is not always evident how the resource operations plan actions will lead to the achievement of all ecological outcomes in the water resource plan.

The *Pioneer Valley Resource Operations Plan* details specific monitoring requirements for the catchment. These data are intended, over time, to indicate whether the objectives of the water resource plan are being met. If the objectives are not being met, the plans can be amended in the future to improve the flow regime for the system.

Submissions on the *Pioneer Valley Water Resource Plan* were first invited when the intention to prepare the plan was announced and again on release of the draft plan. Consultation was undertaken with various interest groups for the development of the plan through formal reference panels, meetings and information sessions. A similar process was undertaken for the development of the *Pioneer Valley Resource Operations Plan*. Additionally, an independent referral panel was established to review the submissions received in the draft resource operations plan prior to the finalisation of the plan.

The *Water Act 2000* requires that a report be prepared to discuss the consultation process for the development of the water resource plan and the issues raised during that process. Although not a statutory requirement, a consultation report was also released for the *Pioneer Valley Resource Operations Plan* consultation process.

### 1999 Implementation Programme Priority

#### *Baffle Creek*

A moratorium on surface water extraction was imposed in July 2004. The need for development of a water resource plan in this catchment is currently under review.

#### *Border Rivers*

The *Border Rivers Water Resource Plan* (DRNM, 2003b) was finalised in December 2003. The intent to prepare a draft resource operations plan was announced in July 2002 and public consultation has been carried out for development of the plan. The draft Border Rivers Resource Operations Plan is expected to be released for review in early 2006.

The plan covers surface water and the capture of overland flow. A moratorium on new works has existed in the catchment since 20 September 2000. The water resource plan continues the moratorium on development of the infrastructure until the resource operations plan is finalised. Additionally, landholders were required to provide information on existing overland flow works to the Department of Natural Resources and Mines.

#### *Burdekin River (and Houghton River)*

The preparation of a water resource plan for the Burdekin River and Houghton River catchments began in January 2002, and it is expected to be finalised by mid-2006. This plan was initially for surface water only, but the Department of Natural Resources and Mines is anticipating that once finalised, the water resource plan will be amended to include groundwater. The resource operations plan for the Burnett River is planned for completion in early 2007, with an amendment to include groundwater around mid-2009.

A water supply planning study for the Burdekin system in August 2002 informed preparation of the Central Regional Water Supply Planning Study with regard to prospective water management options for the region. The water supply planning study considered preliminary economic, social, cultural and environmental assessments of different future water supply options.

#### *Calliope River*

In March 2004 the intention to prepare a draft water resource plan for the Calliope River catchment was announced. This plan is intended to cover surface water

and the capture of overland flow. The water resource plan is scheduled to be finalised in late 2006 and implemented through a resource operations plan in late 2007.

There is an issue about the timing of including groundwater in the water resource plan. Some community members consider that the water resource plan should deal with the connectivity between surface water and groundwater from the outset.

#### *Cooper Creek*

A water resource plan for Cooper Creek was finalised in February 2000. This plan covers both surface water and groundwater extractions. The plan is implemented through rules stated by the water resource plan, and not through a resource operations plan, as it was developed under the previous *Water Resources Act 1989*.

Since April 2004 there has been a moratorium on further works for the capture of overland flow water due to concern from the community that unrestricted take of overland flow would potentially threaten the principles of the water resource plan.

#### *Georgina and Diamantina Rivers*

The Georgina and Diamantina Water Resource Plan was finalised in August 2004. The plan area covers the parts of the catchments within the state of Queensland. A draft resource operations plan was released in September 2005 and is planned to be finalised, after consultation and a public submissions period, by mid-2006.

#### *Gold Coast Catchments*

The Queensland Government announced in October 2005 that it is preparing a draft water resource plan for the Gold Coast catchments. The Gold Coast area covers the main catchments of the Pimpama, Coomera and Nerang Rivers, and Tallebudgera and Currumbin Creeks.

Initially, this plan is to include only surface water resources but, if groundwater use and overland flow use are determined to be significant issues during the plan's development, the plan is expected to be extended to include these resources also. The water resource plan is currently scheduled for completion by mid-2007, with a resource operations plan to be developed in the year following.

#### *Gulf Catchments*

The Queensland Government announced its intention to prepare a draft water resource plan for the Gulf area in July 2003. The plan area covers the catchments of the Staaten, Gilbert (including Einasleigh River), Norman, Flinders (including Cloncurry River), Leichhardt and Nicholson (including the Gregory River) Rivers, Settlement Creek, and Morning Inlet.

The plan is to include surface water, including overland flow water, and subartesian water that is not connected to artesian water. The water resource plan is currently scheduled for completion by mid-2006, with a resource operations plan to be developed by early 2007.

#### *Logan River (including Albert River)*

The management of the Logan River sub-basin was originally announced through the intention to develop a draft water allocation and management plan in 1996. The planning for this area has taken considerable time and the previous planning regime has since been replaced by the development of a draft water resource plan under the *Water Act 2000*.

The water resource plan area will include both the Logan and Albert River catchments. The plan will cover surface water, however if overland flow or groundwater issues (or both) are found to be significant, the plan may be amended in the future.

The Queensland Government considers that a draft water resource plan will be released for consultation and public submission by the end of 2005, with finalisation of the plan in late 2006. Following this, a resource operations plan is expected to be developed to implement the water resource plan in early 2008.

#### *Mary River Basin*

The Queensland Government announced its intention to prepare a draft water resource plan for the Mary River in May 2002 and released the draft in November 2005. Currently it is scheduled for the draft plan to be released in late 2005, to be finalised by mid-2006. The plan area encompasses the Mary, Burrum, Noosa, Maroochy and Mooloolah Rivers and the coastal streams north of the Noosa River mouth.

The plan covers surface water across the basin as well as subartesian and groundwater in the Cooloola Sandmass. Although yet to be announced, it is expected that a resource operations plan for the Mary River area is to be completed by early 2008.

#### *Mitchell River*

The Queensland Government announced its intention to prepare a draft water resource plan for the Mitchell River in February 1999. The plan is to include surface water, including overland flow water, and subartesian water other than that connected to artesian water. The water resource plan is currently scheduled for completion by mid-2006, with a resource operations plan to be developed by early 2007.

#### *Moonie River*

The water resource plan for the Moonie River was finalised in December 2003 (DRNM, 2003c). The draft resource operations plan for the Moonie River was released in February 2005, and it is expected to be finalised by January 2006.

The plan relates to surface water and the capture of overland flow. From July 2004, codes under the *Integrated Planning Act 1997* for assessing works to capture overland flow were applied in the Moonie River catchment. The codes set out criteria for assessing proposed overland flow works and require all new overland flow works to be assessed to some degree. Additionally, landholders are required to provide information on existing overland flow works to the Department of Natural Resources and Mines.

#### *Moreton Basin*

The Queensland Government announced its intention to prepare a draft water resource plan for the Moreton region in May 2005. The Moreton region covers the catchments of the Brisbane, Pine and Caboolture Rivers, Cabbage Tree Creek and the creeks draining into the western side of the Pumicestone Channel, known as the Pumicestone Creeks.

The Moreton water resource plan is being developed to include surface water, overland flow and groundwater resources. A moratorium on any new developments for water resources was issued in May 2005.

The water resource plan is scheduled to be finalised by mid-2007, and be implemented through a finalised resource operations plan by the end of 2008.

A South East Queensland Regional Drought Strategy has been completed. It will examine future water supply options for the Moreton region as part of the South East Queensland Regional Water Supply Strategy. Furthermore, the Queensland Government has been working for some years with irrigators in the Lockyer Valley, a subcatchment of the Brisbane River, to develop a water management strategy for surface and groundwater in that area. The issues raised are expected to be addressed in the Moreton water resource plan.

#### *Warrego, Paroo, Bulloo and Nebine Rivers*

The water resource plan for the Warrego, Paroo, Bulloo and Nebine Rivers was finalised in December 2003 (DNRM, 2003d). The draft resource operations plan for the four rivers was released in February 2005, and it is expected to be finalised by January 2006.

The plan relates to surface water and the capture of overland flow. From July 2004, codes under the *Integrated Planning Act 1997* for assessing works to capture overland flow were applied in the Warrego, Paroo, Bulloo and Nebine River catchments. The codes set out criteria for assessing proposed overland flow works and require all new overland flow works to be assessed to some degree. Additionally, landholders are required to provide information on existing overland flow works to the Department of Natural Resources and Mines.

#### *Wet Tropics Catchments, Whitsunday Catchments*

No official notices have been released in regards to these plan areas. Queensland has stated that it plans to commence a water resource plan for the Whitsunday area in early February 2006. The Wet Tropics plan is not scheduled to commence until at least December 2006, although this will depend on progress with other planning processes.

#### Post 1999 Implementation Programme Priority

##### *Great Artesian Basin*

A draft water resource plan for the Great Artesian Basin was released for consultation and public submission in August 2005. This plan covers artesian water, and subartesian water that is linked to artesian water. The plan covers a large region of inland Queensland. A moratorium on any additional licences to take groundwater from the Great Artesian Basin was declared in February 2005. This moratorium was extended for additional licences to take, and to construct

works for taking, groundwater for the Mulgildie Basin (near Monto) in March 2005.

The water resource plan is expected to be finalised in early 2006, with a resource operations plan being developed by around mid-2006.

#### Public Consultation and Education

The consultation arrangements for water resource plans and resource operations plans are set out in the *Water Act 2000*. The *Water Act 2000* requires that a community reference panel be formed for the development of each water resource plan in Queensland. As such, water resource plans are developed following extensive consultation with representatives of community groups, such as irrigators, graziers, environmental representatives, industry water users and Indigenous interests. Water resource plans can also make provisions for plan specific consultation mechanisms, such as for the *Condamine-Balonne Water Resource Plan*.

Queensland states that significant matters to do with water resource plans are taken to the community reference panel for that plan area. The *Water Act 2000* requires that a consultation report be prepared to discuss the consultation process of the development of the water resource plan and how issues raised in submissions were dealt with.

Upon release of a draft plan, community meetings and information sessions are held in the area to educate on the content of the plans and receive comment. In areas with considerable public concern on specific water planning issues, additional consultative activities are undertaken to ensure public understanding and acceptance of key provisions, such as in the Condamine-Balonne system.

There also appears to be some variability in relation to the extent to which Queensland takes on board the issues raised in community consultation and incorporates them into water resource plans. For example, in some catchments, planning activities are delayed due to extensive consultation to resolve issues, such as in the Condamine-Balonne system.

As discussed, regional water supply strategies are the means by which long-term water security is assured. Consultation occurs regionally with local government, water service providers, industry and the community on how best to meet future water needs, to inform the development of each strategy.

## Submissions

The Queensland Farmers' Federation has raised concern over the pace of Queensland's water planning processes and the fact that the water planning process has been completed for only a small portion of the state. It considers that the process has slowed considerably over the past year. The Queensland Farmers' Federation considers that more funding should be allocated to ensure the water planning process continues.

The East End Mine Action Group is of the view that the Calliope River catchment is overallocated for groundwater. As such, the East End Mine Action Group considers that Queensland has not met its COAG commitment for addressing overallocation for all river and groundwater resources by 2005, in accordance with its 1994 COAG Water Reform Framework commitments. The East End Mine Action Group is concerned also that its views on the scope of the impact of the East End Mine are not shared by the Queensland Government and have not been taken into account for the purposes of water planning for the Calliope River catchment.

## Discussion and Assessment

Queensland considers that the ARMCANZ/ANZECC National Principles for the Provision of Water for Ecosystems and the 1994 COAG Water Reform Framework requirements have been integrated into Queensland's administrative arrangements.

The *Water Act 2000* and water resource plans provide for the recognition of river regulation and consumptive use as potentially impacting on ecological values. Water resource plans include provisions that appear to meet the water regime necessary to sustain the ecological values of aquatic ecosystems whilst recognising the existing rights of other water users. Further allocation of water for any use is on the basis that natural ecological processes and ecological values are sustained.

Accountabilities in all aspects of management of environmental water are transparent and clearly defined through the water resource and resource operations planning processes.

Monitoring regimes under the Queensland planning process inform the adequacy of environmental water and

improvements in understanding of environmental water requirements. Opportunities for research to improve understanding of environmental water requirements are included.

### Water Planning

The Commission is satisfied that the arrangements for water management in Queensland are consistent with COAG commitments and have legislative backing.

In addition, given Queensland's commitments to monitoring in water resource plans and resource operations plans, and the *Water Act 2000* requirement that water resource plans and resource operations plans are to be amended if monitoring results show environmental flow objectives are not being met, the Commission considers that Queensland's activities for addressing water planning and allocation are in line with the 1994 COAG Water Reform Framework and are consistent with the National Water Initiative.

Queensland has not complied with the initial timeframes agreed to in the 1999 implementation programme, nor the revised timeframes specified in the 2004 National Competition Policy assessment, for completing water resource plans and resource operations plans for the state's water resource systems by the end of 2005. Queensland has taken some time to complete the water planning process for the six finalised systems within the state.

While the Commission notes that water resource plans have been finalised for six systems additional to those with completed resource operations plans, and that there are other plans currently at draft stage, the Commission does not have confidence that Queensland's current schedule to complete all planning activities by 2009 will be met. Doubts about the timeframe for completing water planning are reinforced by the fact that several plans are still to be amended to include groundwater, and in some cases overland flow.

The Commission is concerned about the considerable time being taken to implement Queensland's new water management arrangements on the ground. Slippage in the timeframe for rolling out water resource plans and resource operations plans could seriously undermine the goals of water reform.

### Groundwater Planning

Although Queensland states that it is taking steps to include groundwater in its water planning activities, this does not seem to have happened yet in a comprehensive way.

The release of a draft water resource plan for the groundwater resources in the Great Artesian Basin does show progress towards a management regime covering the majority of inland Queensland's groundwater use.

The Commission notes that the pace of planning also has implications for achieving improved management for some groundwater areas where there is significant agricultural development and groundwater use (eg the Burnett basin and the Pioneer Valley). The Commission acknowledges that Queensland has some arrangements in place (especially in the form of moratoria on new extractions) to manage these water resources pending completion of planning.

Although Queensland has demonstrated a process for determining the risk to aquifers across the state, there remains some concern about its application, in light of submissions on this issue.

### Integrated Catchment Management

Although Queensland has a thorough and integrated approach to water planning, this does not appear well linked to a whole of catchment management approach. The integration of natural resource management is tasked to community based Natural Resource Management Boards, formed under the National Action Plan for Salinity and Water Quality and the Natural Heritage Trust strategies. The Queensland Government has not demonstrated any overarching planning mechanism that integrates the considerable work with water planning to the planning of other aspects of land management.

### Provisions for the Environment

The Benchmarking Method is a suitable methodology for determining flow regimes that provide water for environmental requirements. The provision of water for ecosystems seems to be on the basis of the best scientific information available on the water regimes necessary to sustain the ecological values of water dependent ecosystems.

Risk assessments based on conceptual models of riverine ecology and geomorphology are carried out for reaches within a system. These assessments form the basis of this

Benchmarking Method and provide information on the effects of changes in flow on ecological factors.

The Commission considers that Queensland's approach to providing water for the environment is in line with the ARMCANZ/ANZECC National Principles for the Provision of Water for Ecosystems.

### Entitlements

The Commission notes water for environmental requirements is provided as catchment specific flow rules detailed in water resource plans and resource operations plans, as opposed to a specific water entitlement. Under the *Water Act 2000* environmental water provisions are legally recognised.

Queensland's water access entitlements and flow regime for the environment are not implemented for the regions until the relevant resource operations plans have been finalised. Although the mechanisms for providing for the environment are suitable, the Commission is concerned at the timing of implementation of these flow regimes throughout Queensland.

### Water Resource Plans and Resource Operations Plans

Queensland has completed the water resource planning process for six of the 23 systems it has identified for planning in the state. In viewing Queensland's approach to water management and determination of environmental flow arrangements, the Barron and *Pioneer Valley Water Resource Plans* and Resource Operations Plans were looked at as recent examples of activities undertaken in Queensland.

For the Barron River system, the Environmental Investigations and Ecological Implications reports are detailed and scientifically credible, drawing on a wide range of information.

However, there are two issues where a lack of information prevents a thorough assessment being made. Firstly, the Barron system appears to have been the second application of the Benchmarking Methodology and so lacked an extensive set of benchmark sites. Secondly, although the possible effects of different flow components on different organism groups are discussed, the Environmental Investigations Report does not go so far as to identify the most important flow management actions to benefit the riverine ecology, stopping short of recommending desirable flow regimes.

The comments on the Barron River planning activities in relation to best available science also apply to the *Pioneer Valley Water Resource Plan*. The Technical Advisory Panel for both systems comprised well qualified individual scientists and the scientific investigations and predictions of ecological and geomorphological impacts appear to be thorough and of high quality. The flow regime requirements in the water resource plan are quite specific and detailed.

Based on the benchmark method for the development of the Barron and *Pioneer Valley Water Resource Plans* and Resource Operations Plans, the Commission is satisfied that Queensland is seeking to incorporate the best available science into its water planning methodologies. Water resource plans establish clear and quantitative environmental flow objectives, using key indicators of flow regimes. The Commission considers that there remains a lack of transparency about the link between the scientific studies and the final flow regimes in the water resource plans, and that this could be dealt with by including additional reports on the Department of Natural Resources and Mines' website.

The application of the Benchmark Method to the development of water resource plans for catchments within Queensland appears to be as thorough and as accurate as the data permit.

The *Barron Resource Operations Plan* Consultation Report explains why some trade-offs were made. For example, following public submissions, the 80 per cent daily flow key indicator in the scientific reports was replaced with 50 per cent and 90 per cent flows to provide a wider range of flow patterns for assessing variability. Zero flows were to be defined by periods of daily flow of less than one megalitre, and the number of such periods of no flow of at least one and three months duration. Thus, without judging the desirability of these changes, the documentation makes the origins of these modifications clear.

Similarly, the *Pioneer Valley Resource Operations Plan* Consultation Report describes the decision to remove the 740 megalitres per day maximum release from Teemurra Dam to provide flows. It also describes the simplification of other minimum flow requirement releases, and the introduction of a staged approach by SunWater to implement minimum flow requirements. Again, without judging the desirability of these changes, the decision making process is transparent.

Some water resource plans that were initiated before the *Water Act 2000* came into effect may not be as well suited today as they were at the time. However, there is evidence that Queensland is continuing studies to improve the management regimes through the resource operations planning process or water resource plan amendments.

The Commission has also paid some attention to the Condamine-Balonne system. The Commission notes that the importance of the Condamine-Balonne is a function of: the cross-border nature of the system, the significant interception of overland flow in the system, the impact on downstream users, and the adequacy of environmental water provided to downstream ecological assets. Water allocation in the system is relevant to two nationally significant wetlands (lower Balonne River floodplain and Culgoa River floodplain), as well as the Ramsar listed Narran Lakes in NSW.

To place the system in some further context, average annual water extraction in the system represents around three per cent of total average annual water extraction in the Murray-Darling Basin. Nevertheless, implementation of the Condamine-Balonne Resource Operations Plan will become the 'cap' for the Queensland section of the Murray-Darling Basin.

The Commission notes the findings of the Independent Panel that reviewed the *Condamine-Balonne Environmental Flows Technical Report* (DNRM, 2000d). In particular, the Commission notes the Panel's recommendations in relation to the further work required to settle the timing and scale of water flows required by ecological assets dependent on the Condamine-Balonne system. In response to these findings, the Commission considers overall that the ecological outcomes in the water resource plan are comprehensive and appropriate for the catchment, and that the indicators seem to be sensible.

The Commission also notes that the National Competition Council accepted in its 2004 National Competition Policy assessment that some safeguard for the improvement of allocations for the environment—including provision of water for environmental assets other than the Narran Lakes—is provided by Queensland's commitment to formally review the operation of the water resource plan after five years (August 2009).



Although there is yet to be a finalised resource operations plan developed for the Condamine-Balonne system, some provisions are not as clear in the *Condamine-Balonne Water Resource Plan* as they are in, for example, the Pioneer Valley and Barron River catchments. This is evident from the extent of trade-offs between consumptive water use and environmental water needs, and the resolution of submissions and modifications to the Condamine-Balonne Water Resource Plan. Nevertheless, there is good information publicly available on the arguments for trade-offs between consumptive and environmental uses of water, such as the reduction in water harvesting during flow-through events.

Overall, the Commission is satisfied that any trade-offs between environmental and consumptive water requirements are transparent and that their justification is transparent. The transparency of these issues could be improved by making reports such as *Water Resource Plan Consultation Reports* publicly available on the internet.

An outcome of the 2004 National Competition Policy assessment for Queensland was for it to have finalised the Condamine-Balonne Resource Operations Plan by June 2005. This was not achieved by the time of this 2005 National Competition Policy assessment. Furthermore, a draft plan has not been released for comment. The resource operations plan is expected to detail the regime for monitoring the achievement of water resource plan objectives in the Condamine-Balonne system.

The Commission acknowledges the significant challenges presented by completing this plan, including in engagement with stakeholders and in issuing overland flow water licences. Nevertheless, the Commission considers that the slow progress in finalising the *Condamine-Balonne Water Resource Plan* exemplifies the Commission's broader concerns about the implications of Queensland's planning progress for its delivery on wider water reforms.

Further, the Commission notes that amendments will be required to some of the water resource plans and resource operations plans in the future to cover overland flow and groundwater.

#### Public Consultation and Education

During the development of water resource plans and resource operations plans, Queensland consults with a range of stakeholders and members of the community on issues relevant to water planning and specific to individual catchments. These consultation processes are legislated for under the *Water Act 2000*.

Queensland is of the view that the extensive time taken to finalise water management arrangements in some systems within the state is due to the amount of consultation required to inform the community and gain approval of management provisions, such as in the Condamine-Balonne system.

The Commission fully supports the need for effective consultation to underpin water planning. Nevertheless, there is a tension to be managed here between, on the one hand, consultation and, on the other hand, the need to address allocation issues in water systems and realise the benefits of water reform by completing effective water plans as soon as possible.

Overall, the Commission considers that Queensland's consultative processes are transparent and effective in engaging interested parties in planning processes. In this way, its processes promote greater public confidence in planning outcomes and implementation. Nevertheless, the Commission considers that aspects of Queensland's consultation processes may need to be managed differently in order to maintain the momentum of roll-out in plans which is needed to meet Queensland's own planning timeframes.

#### Summary

For this 2005 National Competition Policy assessment, the Commission considered recommending a penalty for Queensland as a reflection of the depth of the Commission's concerns about the pace of water planning in the state. Conversion of water licences to water entitlements (including the register of these entitlements), and the full capacity to trade water entitlements only occurs following the completion of a water resource plan and a resource operations plan. Any slippage in the timeframe for rolling out these plans therefore has a direct bearing on the implementation of these fundamental elements of water reform in Queensland.

It also has implications for the way in which stakeholders perceive Queensland's implementation of National Water Initiative commitments and their consequent support of the wider water reform process. In particular, it is important that they are able to enjoy the benefits of the reforms (for example, more secure entitlements, trading opportunities) while at the same time being better able to bear some of the costs of reform (for example, in the form of reduced allocations, or higher levels of cost recovery for water).

On balance, the Commission decided not to make a recommendation of a penalty for Queensland in view of the following factors:

- there is little doubt that Queensland has effective water planning processes, including methodologies for using best available science in developing its plans and comprehensive community engagement as an integral part of legislative planning provisions and planning practice, and
- based on the current state of knowledge, none of Queensland's surface water systems are likely to be overallocated, and therefore there is not this additional urgency to complete planning and settle the allocations between consumptive and environmental water.

In addition, the Commission was able to secure commitments from Queensland in relation to its water planning. Queensland has confirmed that it intends to make every effort to complete water resource plans and resource operations plans according to the schedule, current at September 2005, provided to the Commission for this 2005 National Competition Policy assessment. Under this schedule, 13 resource operations plans will be completed (or amended) by July 2007. Furthermore, Queensland is prepared to ensure actions are implemented to:

- continue to finalise high quality water resource plans and resource operations plans in priority areas
- reduce timelines for finalisation of plans wherever possible, without compromising quality, through process improvements (including legislative amendments) and policy approaches, specifically targeted to areas like south east Queensland, where water scarcity and a need for additional infrastructure
- review consultation timelines and implications of calls for extensions, in liaison with the Commission

- permit, by way of regulation under the *Water Act 2000*, permanent trading of interim water allocations in agreed SunWater Water Supply Schemes, in advance of finalising corresponding resource operations plans, and
- administratively implement at least some of the flow management and monitoring requirements, as stated in the finalised Condamine and Balonne Water Resource Plan (DRNM, 2004b), prior to finalisation of the resource operations plan.

The Commission considers these additional commitments represent a credible approach to achieving the shared objective of Queensland and the Commission to maintain quality plans and to secure the benefits of water reform as soon as possible.

#### 4.2.4 Assigning Risks for Changes in Allocation

##### Assessment Issues

The Commission expects Queensland to demonstrate that it has a process and timetable in place to integrate the risk assignment framework into its legislative and administrative water entitlement and planning regimes, and to have applied the framework for any changes in allocations that have not been provided for in its current water plan overallocation pathways.

Until the year 2014, any risk to a water allocation will be dealt with under the *Water Act 2000*. The *Water Act 2000* currently includes some provision for compensation, as discussed below and in Section 4.8 on Community Partnership and Adjustment.

In areas covered by a finalised water resource plan, the Queensland Government must provide reasonable compensation if a change to a water resource plan, made within ten years of the plan's approval, reduces the value of a water allocation. On the other hand, all risk in relation to a change in value of a water allocation at the time of planning or planning review rests with the water allocation holder.

In areas not covered by a finalised water resource plan, entitlements to water will remain as water licences with a specified annual volumetric allocation tied to land, until converted under a resource operations plan.

Queensland has developed a general process and timetable for integrating a risk framework into its legislative regime. Legislating for a clearly defined risk assignment framework requires amendments to the *Water Act 2000*. Draft legislative amendments and agreements with the Commonwealth Government are planned to be made before the end of 2006. Cabinet endorsement of the approach is expected to be sought in mid-2007. Community consultation is a component of this integration process. With the new legislation to commence from 2014, Queensland's risk framework is expected to be in line with the National Water Initiative.

The new framework is expected to provide a more formalised compensation regime for reducing entitlements, including for reasons other than climate change and natural events—such as drought, after 2014.

### Discussion and Assessment

The Commission is satisfied that Queensland has a process and timetable in place for incorporating the National Water Initiative risk assignment framework into its legislative and administrative regimes.

The Commission is concerned that there is some uncertainty surrounding water entitlements not covered by a current resource operations plan that remain outside of any compensation regime. These entitlements will remain outside of any formalised risk framework until a water resource plan and associated resource operations plan are finalised for that area. The Commission notes that this is a further reason why any further delays in the timetable for water planning could undermine the key gains of water reform.

The Commission will continue to track Queensland's progress with regard to its timetable for integrating a risk assignment framework, to ensure that the changes made are consistent with the National Water Initiative and that they are made in a timely manner.

The Commission considers that Queensland has met its COAG commitments in this area.

## 4.2.5 Indigenous Access

### Assessment Issues

The Commission is looking for Queensland to show that it has in place arrangements for the incorporation of Indigenous water issues into water planning processes, including the recognition of the possible existence of native title rights to water.

Water planning processes under the *Water Act 2000* incorporate Indigenous issues. The Act requires that when preparing a draft water resource plan, future cultural water requirements and cultural values must be considered. Additionally, it includes the establishment of a community reference panel for each plan area, for the purpose of providing community and stakeholder input for the development of water resource plans and resource operations plans. Community reference panels are required to include representatives of cultural, economic and environmental interests in the plan area. Queensland considers that through this process, the Indigenous representatives of the land covered by a particular plan are consulted.

Queensland has stated that in addition to these panels, separate consultation tailored for Indigenous requirements may be carried out if necessary. The requirement of this additional consultation will be determined on a case-by-case basis.

The purpose of water resource plan objectives is primarily to provide for a flow regime that maintains natural flow patterns. Plans also contain specific provisions for the maintenance of sites identified as being of significant value, such as waterholes. These provisions allow for the protection of culturally significant areas as well as the health of aquatic ecosystems that provide the basis for traditional uses.

### Discussion and Assessment

Indigenous water issues in Queensland are raised and addressed through the water resource planning process. Community consultation activities are required under legislation to include Indigenous representatives. Any rights to native title identified in an area are provided for in the provisions of the relevant water resource plan. It is unclear

whether the plans allow for any new native title claims after finalisation.

The Commission is satisfied that Queensland has adequate arrangements in place for the incorporation of Indigenous water issues into water planning processes.

#### 4.2.6 Interception

##### Assessment Issues

The Commission will look for Queensland to provide information on the steps being taken to implement water interception measures detailed in the National Water Initiative, including any application of the National Water Initiative provisions to recent activities.

Queensland has noted that the Department of Natural Resource and Mines presently oversees the management of ‘interception water’, through provisions in water resource plans and associated resource operations plans. Moratorium notices<sup>2</sup> that limit additional works in planning areas are issued on announcement of the development of a draft plan and are used to limit particular interception in certain catchments. The types of works that are limited by a moratorium will depend on estimations of the condition of the resource and the need to ensure the integrity of the natural resource planning process.

Controls on overland flows are in place in the Condamine–Balonne, Border Rivers, Fitzroy, Georgina–Diamantina, Moonie, and Warrego–Paroo–Bulloo–Nebine plan areas. Overland flow is also expected to be controlled for all rivers declared under the Wild Rivers legislation.

In the systems noted above, the water resource planning process is used to take account of the extent of interception of surface water, the impacts of this interception on regional and natural resource management outcomes, and likely trends for the type and amount of interception and associated impacts.

Water resource plans for the above systems account for existing interception activities by requiring landowners to

notify the Department of Natural Resources and Mines of any existing works (including farm dams). The water resource plans determine the significance of interception and may require specific authorisations for particular interception activities on this basis. This includes requirement of an entitlement to access the water for existing works and an approval to construct works for proposed structures. Additionally, some works may, under a water resource plan, be required to comply with a particular code under the *Integrated Planning Act 1997*.

The Queensland Government has not identified any forestry activities or landuse changes as significant sources of overland flow interception in catchments with a finalised water resource plan and resource operations plan, or other areas currently undergoing water planning activities. Existing and proposed plantations and urban expansion is considered minor in comparison with the total size of the plan area in these instances.

The *South East Queensland Regional Water Supply Strategy* considers urban water use in this highly developed area of the state, including reduction, capture and use of increased runoff.

Under the *Water Act 2000* the Minister can at any time amend a water resource plan or resource operation plan if an activity is considered to present a risk to the future integrity of an entitlement for accessing water and the achievement of environmental objectives for the system. Amendments have been made to the *Fitzroy Water Resource Plan* to incorporate controls of overland flow, to better manage the risks to the plan’s outcomes.

#### Discussion and Assessment

Queensland is taking steps towards addressing water interception measures through its water planning activities.

For the catchments that deal with interception of overland flows by farm dams and other storage works, the measures undertaken through water planning processes address impacts of interception appropriately, in line with the National Water Initiative.

Catchments in the south west of the state have controls on works to intercept overland flow; however these provisions are not carried over into the planning regimes of other catchments within Queensland. The Commission notes that this area of the state may have been targeted specifically due to the occurrence of many large interception works, and

<sup>2</sup> Moratorium notices are published under s.26 of the *Water Act 2000* to protect the natural ecosystem or to protect existing water entitlements and other authorities to take or interfere with water.

These moratorium notices:

- prevent particular applications (specified in the notice) from being accepted or dealt with while the notice has effect
- prevent the starting of new works or the enlarging, raising, deepening or changing of existing works. It is an offence under the Act to start the construction of work, or to continue to construct works, in contravention of a moratorium notice.

that approaches developed here will be extended to address overland flow in other areas of the state that also experience significant interception activities.

The Commission is concerned that interception from plantation forestry is not being fully assessed. Although resource operations plans have only been finalised in five catchments, Queensland has not demonstrated any processes for addressing plantation forestry as a major interception activity. Furthermore, interception of groundwater from bores is not included in all planning activities either.

Additionally, there is no indication of the process for classifying the level of risk to water resources in a system due to impacts of overland flow development.

The Commission considers that Queensland has met its COAG commitments in this area. The Commission considers, however, that this issue will need to be addressed further through water planning activities across the state and will continue to track Queensland's progress on implementing water interception methods as outlined in the National Water Initiative.

### 4.3 Water Markets and Trading

#### Assessment Issues

Trading arrangements in water entitlements are to be instituted to maximise water's contribution to national income and welfare, where systems are physically connected or hydrologic connection and water supply considerations permit trading. Under the 1994 Water Reform Framework, trading arrangements were to be finalised by 2005. The National Water Initiative expands and re-defines the 1994 water reform commitments.

Consistent with its National Water Initiative commitments, the Commission expects Queensland to:

- have removed remaining institutional barriers to temporary trade;
- be well advanced in the removal of any existing institutional barriers to permanent water trade out of irrigation areas, up to an annual threshold limit of four per cent of the area's total water entitlement
- have made progress in the development of arrangements for interstate water trade, including for the permanent trade of water access entitlements

- demonstrate trading rules in existing water management plans facilitate trading consistent with the actions and outcomes of the National Water Initiative, or, if inconsistent, a process for review is in place
- demonstrate a process is in place to incorporate trading rules consistent with the National Water Initiative into new water plans, and
- have pathways in place by the end of 2004, leading to the full implementation by the end of 2006, of compatible, publicly-accessible and reliable water registers of all water access entitlements and trades.

The *Water Act 2000* provides the legislative basis for the trading of water allocations. The Act establishes a water resource planning process, under which catchment-based water resource plans are developed and then activated through resource operations plans. The implementation of the resource operations plan creates tradeable water allocations, separate from land title, and specifies relevant trading rules that are designed to protect users and the environment. Resource operations plans are in place for the Burnett, Fitzroy, Pioneer Valley and Barron river basins.

Water allocations are separated from land title upon finalisation of a resource operations plan. Until then, consumptive water is held under an interim water allocation or a pre-existing water licence. Interim water allocations (to be directly converted once the relevant resource operations plan is implemented) and pre-existing water licences remain attached to land<sup>3</sup>.

The supplemented (regulated) water supply schemes are managed by headworks operators under a resource operations licence (in areas where a resource operations plan has been implemented) or under interim resource operations licence (in other areas). The resource operations licence holder is regulated through the licence conditions, including the adherence to the trading rules set out in the relevant resource operations plan. A commercial arrangement then exists between the resource operations licence holder and the allocation holder for the delivery of water. Delivery of allocations through channels and pipes is managed by water authorities or service providers under a delivery operations licence.

<sup>3</sup> Refer to Section 4.2.1 for more details on Queensland's water entitlement provisions.

Three main types of trade are possible in Queensland:

- permanent trade of water allocations and interim water allocations
- leases of water allocations, and
- seasonal water assignments (temporary trade) of water available under water allocations, interim water allocations and water licences.

#### Permanent Trade Provisions

Under Queensland's water management arrangements, resource operations plans are required to enable permanent trading and to define trading rules in an area.

Water allocations and interim water allocations in some locations can be permanently traded. Water licences remain fixed to the land on which the water is used, and cannot be permanently traded.

The Water Regulation 2002 provides an interim trading regime, whereby the holders of interim water allocations may trade their allocations to other land. The allocation is un-attached from the seller's land and re-attached to the buyer's land. This process applies in those areas prescribed by the regulation (presently the Mary River water supply schemes).

Permanent trades are subject to trading rules specified in the catchment specific water resource plan, resource operations plan or the Water Regulation 2002. Permanent trades are managed and approved by the Department of Natural Resources and Mines.

Permanent trade of water allocations occurs through water allocation tagging. Under a tagging regime, the water under the allocation remains tagged to the source, but authorisation is given to extract the water from somewhere else in the system (provided the physical trade is permitted under the relevant resource operations plan). As the water product itself has not changed, a conversion factor (exchange rate) to account for difference in the reliability of supply is not needed. The resource operations licence holder still manages the water allocation and enters into a supply contract with the new allocation holder. In channel and pipe distribution systems, commercial arrangements are established between the distributor (the delivery operations licence holder) and the allocation holder.

In 2005, the *Water Act 2000* was amended to allow distribution operations licence holders to manage the risks of a reduced customer base and possible stranded assets that may result from the permanent trade out of distribution areas, by allowing for the imposition of a specific charge<sup>4</sup>. The commitment to pay the charge stays with the water allocation holder even if the water allocation is sold, moved to a different location, subdivided or amalgamated, until the delivery operations licence holder agrees that the commitment has been satisfied (whether through the payment of a one-off exit fee or any other agreement between the allocation holder and the delivery operations licence holder).

#### Temporary Trade Provisions

Temporary water trades in Queensland are called seasonal water assignments. A seasonal water assignment is the transfer of some or all of the water under a water entitlement in a water year, to another water entitlement.

Seasonal water assignments in supplemented systems are managed and approved by the resource operations licence holder. Seasonal water assignments in unsupplemented systems are managed and approved by the Department of Natural Resources and Mines.

Like permanent transfers, seasonal water assignments are subject to trading rules specified in the catchment specific water resource plan, resource operations plan or the Water Regulation 2002.

#### Interstate Trade

Permanent trade is currently not possible between Queensland and New South Wales. The two states are working to develop an intergovernmental agreement on trading in tagged entitlements on the Border Rivers system. Administrative protocols for compliance and enforcement, metering and work and use approvals will be developed. The agreement will also establish principles for effectively coordinating water-trading rules across jurisdictions. The agreement is due for completion in June 2006.

<sup>4</sup>The charge is subject to price oversight by the Queensland Competition Authority under the Queensland Competition Authority Act 1997.

### Water Allocation Change Rules and Approvals

There are no restrictions on transfer of ownership of an allocation, but there are restrictions on changing one or more of the attributes of a water allocation through a trade (such as a change to location, purpose of use, priority or flow conditions). For allocations with registered interests, the approval of the registered third parties is required before a trade may proceed.

The resource operations plans specify water allocation change rules (trading rules) that are designed to protect the environmental flow and resource security objectives set out in the corresponding water resources plan. The water allocation change rules detail how an allocation may be transferred, subdivided, amalgamated and changed.

At a principles level, trading rules are based on:

- the hydrological limitations of the catchment, and
- the ecological limitations of the catchment (as identified in the environmental flow objectives specified in the plan).

Trading zones, based on hydrological considerations, are employed to facilitate trade within water basins. These zones are specified in the relevant resource operations plan. They permit trade within the zone without the need for approval or change of allocation. The resource operation plans also includes pre-tested limits of the volume of water that may be traded between zones. The pre-tested limits are designed to provide certainty that a trade will not affect reliability of supply or have any adverse environmental impacts. Trading beyond the pre-tested limits may also be allowed, following an individual assessment and public advertisement to ensure that such a trade will not undermine environmental flow objectives in the basin.

Queensland has been reviewing the pre-tested limits in some basins, in response to concerns that they were too restrictive. Queensland has recently revised the water allocation change rules in the Burnett Basin Resources Operations Plan for the Upper Burnett Water Supply Scheme to allow the trade of an additional 20,000 megalitres per year.

Within supplemented systems, a trade will be registered only if there is evidence that a supply contract exists between the buyer and the water supply scheme operator. The supply

contract specifies the terms and conditions of delivery, consistent with the supply rules of the resource operations plan.

Irrigators are required to prepare a land and water management plan before water obtained through trading can be used, to protect against adverse on-farm impacts of irrigation.

The *Water Act 2000* provides for periodic review and, if required, subsequent amendment of the water resource and resource operations plans in achieving the plans' objectives, including review of the water allocation change rules.

### Water Allocations Register

Allocations are recorded on the Water Allocations Register. The register records the ownership and attributes of, and interests and dealings in, water allocations. Public searches are permitted and copies of records are available (for a prescribed fee). The consent of registered interested parties must be obtained prior to a change in allocation being recorded.

Third-parties with an interest in an entitlement can notify their intention to register their interest when the entitlement is converted into a water allocation under a resource operations plan. This notification freezes any dealing with the water allocation for 60 business days. Generally, this notice will be given by financial institutions that hold mortgages on land currently attached to converting water entitlements, to ensure that their interests are registered against the new water entitlements.

Under the National Water Initiative, Queensland is participating in the development of nationally compatible registers for water access entitlements (allocations) through an intergovernmental working group under the Natural Resource Management Ministerial Council. Compatible registers will provide for increased confidence for those investing in the intra and interstate water market and help minimise transaction costs on water trades.

### Submissions

In its submission, the World Wildlife Fund comments that the environmental impacts of transferring water need to be fully understood prior to allowing water to be traded. Water trading resulting in a negative impact on the environment—

either through instream impacts or on-ground use—should not be allowed. Where these impacts are not fully understood, a precautionary approach must be applied.

The Queensland Farmers' Federation is of the view that the development of water markets and trading in Queensland will be constrained for at least another five years by the slow progress of reform implementation and a number of local restrictions on trading. The Federation's concerns include:

- the complexity and level of detail required in the preparation of land and water management plans (required before a traded allocation may be used for irrigation)
- the number of trading zones in the Burnett and Fitzroy Basin Resource Operations Plans is more than is needed to meet water security objectives, and it unnecessarily restrict pre-approved trades, and
- the lack of defined conversion factors for trades that involve a conversion from medium to high security allocations could see adverse impacts on the medium security supply.

### Discussion and Assessment

For this assessment, the Commission is looking for Queensland to be well-advanced in removing any existing institutional barriers to permanent water trade. Queensland has established a legislative regime to enable permanent intrastate trade, but remains in the early stages of implementing the necessary administrative arrangements for water trading. Resource operations plans are required to create tradeable water allocations, separate from land title, and specify the relevant trading rules. Currently, resource operations plans have been completed for only five basins. In line with its current planning timetable, Queensland intends to complete resource operations plans for the remainder of the state by 2009.

Pending completion of resource operations plans, Queensland has provided for some interim tradeable allocations in some areas. These remain attached to land and are only tradeable by un-attaching from the seller's land title and re-attaching to the buyer's land title. The Commission notes the commitments made by Queensland

to provide for interim trading arrangements in additional water systems (see Section 4.2.3 on Water Planning and Addressing Currently Overallocated and/or Overused Systems).

While Queensland finalises its resource operations plans, significant barriers to permanent trade continue to be imposed under the state's historic entitlement arrangements. The ongoing linkage of water entitlements to land continues to prevent the entry of non-landholder participants to the water market and, given the separation of water and land is a prerequisite for water allocation tagging, tagging facilitated intra and interstate trade is also delayed.

Given the opening of opportunities for water trade in allocations is explicitly linked to the pace of water planning in the state, the Commission is seriously concerned that the continuing delays in the completion of resource operations plans severely limits permanent trade in the state and Queensland's ability to meet its COAG commitments. These concerns are discussed in Section 4.2.3 on Water Planning and Addressing Currently Overallocated and/or Overused Systems.

The Commission is satisfied with Queensland's and New South Wales' approach to developing interstate trading arrangements. The Commission urges the two states to continue to work to have the necessary arrangements in place by mid-2006 (the current timetable).

The Commission considers Queensland's trading rules are generally consistent with the principles set out in the National Water Initiative. The implementation of resource operations plans addresses the environmental protection objectives of the associated water resource plans and the *Water Act 2000*. Water allocation change rules (trading rules) in the finalised resource operations plans reflect these objectives and are generally only applied to manage potential environmental impacts and the physical constraints of the system.

The use of trading zones in Queensland (as defined in the resource operations plans) are employed to help streamline the management of trading, including managing potential environmental and resource security impacts. Concerns have been raised in this and previous assessments that Queensland over-specifies the number of trading zones



that are required to manage the potential environmental or allocation security impacts that may result from trading. Queensland has taken steps to amalgamate zones. The Commission also notes that trade above the pre-tested limits is allowed, but requires an assessment of the potential environmental and third party impacts before an approval is given.

The Commission accepts Queensland's general position that it will work to make trading zones in resource operations plans as broad as possible, while still meeting its environmental and allocation security objectives set out in the relevant water resource plan. Queensland is urged to continue to adopt this principle, in the development of new resource operations plans and the review of existing plans.

The Commission notes that Queensland has legislated to allow the use of exit fees (or other charges) to manage the potential third-party impacts (including so-called stranded infrastructure assets) that may result from trade out of an irrigation distribution area. The Commission also notes that the Queensland pricing regulator, the Queensland Competition Authority, will monitor the charges to ensure they are reasonable. Queensland will need to continue to monitor the use and level of exit fees and charges to ensure they do not become a barrier to trade.

The Commission notes that there is some concern that conversion factors (exchange rates) for trades that involve a conversion of allocation from medium to high security have not been clearly specified in some areas. In relation to this issue, Queensland will need to ensure that suitable conversion factors are in place for any trades that involve a change in security, to protect against any reduction in allocation security of third parties.

Queensland has a public entitlement register (the Water Allocations Register) that defines entitlements and registers third party interests. The approval of registered third parties is required before a trade may proceed. Queensland is participating in a national process to develop compatible registers across jurisdictions. The Commission stresses the importance of a strong and compatible entitlement register in underpinning market confidence and looks for Queensland's continued close engagement in this national process.

The Commission considers that Queensland has made some progress towards meeting its COAG commitments on water trading. Queensland has put the necessary legislative arrangements for trade in place. The separation of water from land, and the development of the necessary trading rules and provisions, is tied to the implementation of resource operations plans. The pace of water planning is discussed in Section 4.2.3 on Water Planning and Addressing Overallocated or Overused Systems.

## 4.4 Best Practice Water Pricing and Institutional Arrangements

### 4.4.1 Water Storage and Delivery Pricing

#### 4.4.1a Metropolitan

##### Assessment Issues

##### *Full cost recovery*

Queensland is asked to demonstrate that there has been substantial movement towards upper bound pricing for all metropolitan water and waste water businesses. For those businesses that are not pricing close to the upper bound of cost recovery, Queensland should demonstrate price paths are in place that will move them towards the upper bound of cost recovery.

##### *Dividends*

Queensland is asked to demonstrate that dividend policies for metropolitan water and wastewater businesses comply with COAG obligations.

##### *Cost recovery*

Queensland currently has five local governments that fit within the National Water Initiative definition of a metropolitan water service provider—Brisbane City Council, Gold Coast City Council, Logan City Council, Cairns City Council, and Maroochy Shire Council. All of these metropolitan areas have achieved upper bound pricing.

Urban pricing reforms have led to more than 80 per cent of all urban water connections paying for water on a full cost-recovery basis. Both the Queensland Competition Authority and the National Competition Council have endorsed these reforms. Currently, councils providing urban water and sewerage services to the community must ensure that water

charges are consistent with the pricing principles set by the Queensland Competition Authority to protect consumers from being overcharged for water delivery services (Queensland Government, 2005).

#### Dividend policies

Queensland claims that dividend policies for metropolitan water and wastewater comply with COAG pricing commitments for metropolitan water and wastewater businesses. Dividend payments are negotiated between the board of a Local Government Owned Corporation and the shareholder (often the local government). Under the Local Government Act 1993, the board must recommend to the shareholder that the corporation pay a stated dividend, or not pay a dividend for the financial year. Following consultation between the board and the shareholder, the shareholder then approves the recommendation or suggests a different dividend payment.

The Local Government Owned Corporation dividend payment for the financial year must not exceed its profits, after provision has been made for any income tax or its equivalents.

### Discussion and Assessment

#### Cost Recovery

Of the five metropolitan water service providers, all are recovering costs at or near the upper bound. Urban pricing reforms have led to more than 80 per cent of all urban water connections paying for water on a full cost recovery basis.

Based on the above information, the Commission considers that Queensland has met its COAG commitment with regard to full cost recovery for metropolitan water and wastewater businesses.

#### Dividend policies

With dividends being paid out of profits, and negotiations occurring between the board of a Local Government Owned Corporation and the shareholders, the dividend policies of Queensland metropolitan water and wastewater businesses comply with the COAG commitment.

On the basis of the above information, the Commission considers that Queensland has met its COAG commitment with regard to dividend policies.

### 4.4.1b Rural and Regional

#### Assessment Issues

Queensland is asked to demonstrate for rural and regional systems that:

- systems have achieved at least the lower bound of cost recovery and be moving toward upper bound, or
- established a price bath to achieve at least the lower bound of cost recovery with transitional community service obligations made transparent, or
- where the lower bound of cost recovery is unlikely to be achieved in the long term, made the community service obligations required to support the scheme transparent, or
- made cross subsidies transparent.

In particular, Queensland is required to demonstrate that:

- all SunWater schemes, and all regional water service providers with more than 1000 connections, have achieved the lower bound of cost recovery, or have price paths in place that enable the schemes to achieve the lower bound and are moving towards the recovery of upper bound costs where practicable, and
- for those schemes and water service providers where it is not feasible to achieve the lower bound costs, Community Service Obligations are separately funded, transparently and publicly reported, and are reducing over time.

#### Rural Systems

##### *SunWater Bulk Water*

SunWater is a government owned corporation, possessing the infrastructure used to deliver and store water. SunWater supplies around 40 per cent of the commercially used water in Queensland through 27 water supply schemes, and a number of private retail water suppliers.

SunWater has established customer councils for 20 of these schemes (including seven with distribution systems for irrigation). Customer councils are a form of local involvement in the management of the schemes, and include members of local governments, industry and irrigators. Customer councils act as advisory groups to SunWater's decision-making processes. Of the other seven water supply schemes, two maintain a relationship with SunWater

through irrigator committees rather than customer councils, and three have a small number of customers and two have no irrigation customers.

The price setting process approved by the Queensland Government is consistent with the joint submission to the Department of Natural Resources and Mines agreed by the Queensland Farmers' Federation, SunWater, Customer Councils and Committees, and industry representative bodies including: Canegrowers, Queensland Dairy Organisation, Cotton Australia and Growcom. SunWater will set prices in a jointly agreed three-tier negotiation and communications process:

**Tier 1**—a committee of SunWater customers and industry representatives negotiate with SunWater to set statewide pricing principles to apply to all SunWater schemes (within the government policy framework).

**Tier 2**—involves meetings and negotiations between SunWater and local customer committees at scheme levels, in which SunWater will set prices (within Tier 1 principles as consistent with the government policy). Tier 1 decisions will be honoured, but to reflect local conditions there is scope for trade-offs in price and service levels at a scheme level.

**Tier 3**—SunWater will provide all its rural customers with updates on Tier 1 and Tier 2 progress, including overall scheme costs and tariffs.

#### *SunWater Schemes*

The prices set in the above process are charged to customers of SunWater. The majority of these customers are irrigators. There are also SunWater customers who on-sell their water. While encouraged to implement COAG water reform commitments, these retailers are outside the purview of SunWater and records of their activities are not kept.

Queensland's rural water schemes have moved substantially towards achieving the lower bound of cost recovery in recent years as a result of a price path set in October 2000. Queensland estimates that on average, 53 per cent of SunWater's allocated rural water in 2000–01 achieved the lower bound of cost recovery. This will increase to around 94 per cent of allocated rural water achieving, or being on price paths to achieve, lower bound costs by 30 June 2007 at the latest. Queensland has noted that there has been an increase in lower bound costs since the last price determination in 2000.

Following a review of pricing, new arrangements are to be put in place for rural irrigation water and local management arrangements for SunWater schemes. The aim is for new prices to be implemented for a five-year period from 2006–07 to 2010–11. The setting of new prices will involve transparency of SunWater costs, as well as benchmarking of costs to ensure efficient costs of water delivery. SunWater has negotiated with customer representatives to set new rural water prices and service standards on a scheme-by-scheme basis. SunWater was to report to the Queensland Government by 30 September 2005 on the progress of these negotiations. Regular reports will be required from SunWater thereafter (DNRM, 2005e).

#### *Community Service Obligations*

At SunWater's corporatisation, the Queensland Government agreed to pay a community service obligation each year from 2000–01 to 2004–05 to cover the cost of regulatory obligations and to subsidise the cost of water to irrigation customers. The community service obligation agreed to was budgeted to reduce over time from \$11.6 million to \$6.097 million over the period of the price path arrangements.

As mentioned above, 94 per cent of SunWater's allocated rural water is achieving, or on a path to achieve, lower bound cost recovery. The six per cent of allocated rural water not at 100 per cent of lower bound cost recovery are known as SunWater's Category 3 schemes. In 1999–2000, these schemes were assessed by the Queensland Government as not being able to reach lower bound over a five to seven year price path, without experiencing extreme financial hardship. Community service obligations are paid to SunWater to cover the difference between the revenue received from these irrigation customers under the transitional price path arrangements and the efficient cost of operating the scheme. Once individual schemes attain lower bound pricing the state does not provide any further community service obligations for these schemes.

While some Category 3 schemes will not achieve the lower bound of cost recovery under the current price path, and two have no price path in place, Queensland intends to implement new price paths for a five year period from 2006–07 to 2010–11, which will move all of these schemes to, or further towards, the lower bound of cost recovery.

Most Category 3 schemes were at 50 per cent of lower bound in 2005–06 and it is intended, where practical, to increase the percentage of lower bound costs recovered from 2006–07 to 2010–11. This will mean that community service obligations will continue to fall in Queensland.

It is believed unlikely that all schemes will reach full cost recovery, and some community service obligations will continue. Community service obligations are reported in SunWater annual reports on a scheme-by-scheme basis. Due to increased lower bound costs, largely due to the cost of complying with water reforms, community service obligations will continue to be paid over the next pricing period. No community service obligations will be paid beyond 2010–11, aside from Category 3 schemes.

Category 3 schemes are being reviewed and SunWater will present a paper to the Queensland Government on options for dealing with these schemes. No new schemes are to be added to the category (if practical) and users are to experience price increases similar to users in other schemes.

In addition to irrigation community service obligations, the Department of Natural Resources and Mines provides community service obligations for dam safety and resource management.

The dam safety community service obligation is paid to SunWater to cover the cost of undertaking emergency action plans for storages. When SunWater completes these plans for storages there will be no more community service obligations for this element. Any future annual community service obligations may vary depending on the planned schedule of works.

The resource management community service obligations include two components:

- water management and planning and water rights management, including water resource plans, resource operations plans, and interim resource operations licences, and
- SunWater water information management systems for the development of a computerised information system for water management and reporting purposes.

### Cross-subsidies

The Queensland Government has reported that the only subsidies currently paid by the Queensland Government are the community service obligations to SunWater, making cross-subsidies non-existent. To address the cross-subsidisation issue within irrigation schemes the initial rural water price paths made a pricing distinction between river and off-stream customers. Generally, prices paid by river customers reflect a share of the dam infrastructure, whereas prices paid by channel and pipe customers reflect the higher costs of that infrastructure (in addition to the price reflecting a share of the dam). This approach has reduced cross-subsidisation within schemes considerably and—as a minimum—will continue.

### Regional Systems—Cost Recovery

All councils outside the largest 18 local governments (the remaining 107 councils) are not legislatively required to implement COAG water reforms. Nevertheless, the adoption of COAG water pricing and tariff reforms has been strongly encouraged through the voluntary Code of Competitive Conduct and the Queensland Local Government National Competition Policy Financial Incentive Package. The Queensland Government is firmly of the view that the adoption of COAG water reforms should be a decision of individual councils, taking into account the circumstances of their own communities and only where implementation of COAG water reforms has a clear public benefit. Complaints on water pricing by these agencies can be made to the Premier, or Treasurer for assessment in conjunction with the Minister for Local Government and Planning to ascertain whether there are sufficient grounds to warrant referral to the Queensland Competition Authority.

For all local government water and wastewater businesses, Queensland has provided information on: the type of reform applied, the most recent return on capital, and the pricing benchmark achieved during the life of the National Competition Policy Local Government Financial Incentive Package Scheme. Of the 107 councils formally outside COAG, 92 have been nominated for reforms. Of these, 23 councils made a negative return on capital, while 67 local councils made a positive return on capital—13 of these over ten per cent. Information on the remaining two councils was unavailable.

In February 2005, the Queensland Competition Authority released the latest report on pricing progress for regional suppliers. This report noted that just over 50 per cent of regional suppliers had achieved upper bound. The next report is due in February 2006. At this point, further assessment of progress towards upper bound pricing will be possible.

#### Community Service Obligations

The Local Government Act 1993 requires the largest 18 local governments with significant water and sewerage business activities to identify and publicly report any cross-subsidies that exist between different classes of customers and to identify and publicly report on community service obligations.

For the remaining 107 councils with water and sewerage business that is not considered significant (they generate in aggregate expenditure less than \$48.6 million), the identification and reporting of community service obligations and cross-subsidies is not required under legislation. However, the Queensland Local Government National Competition Policy Financial Incentive Package provided a financial incentive for the councils to undertake such an analysis while it was in operation.

In 2004, 30 councils were identified as having difficulties in identifying and reporting on community service obligations and cross-subsidies. Funds from the Business Management Assistance Program (which was established to help small to medium size councils achieve National Competition Policy reforms) were utilised to provide assistance to these councils. This resulted in 26 out of the 30 councils successfully completing cross-subsidy reports and identifying, costing and funding community service obligations. In the near future, the Queensland Competition Authority will supply the Department of Natural Resources and Mines with a full list of councils and their reported community service obligations and cross-subsidies.

## Discussion and Assessment

### *Rural Water*

Queensland has demonstrated that 94 per cent of SunWater allocated water now achieves lower bound cost recovery or is supplied on price paths to achieve lower bound costs by 30 June 2007 at the latest. The government is in the process of finalising its policy position on SunWater pricing for the next five years. The Commission notes that the Queensland Government has raised the issue that lower bound costs have increased since the previous determination in 2000. The Commission will need to continue to monitor how this will affect the price paths for lower bound cost recovery.

On the basis of the above information, the Commission considers that Queensland has made satisfactory progress toward meeting its COAG commitment with regards to achieving lower bound pricing for rural water businesses and SunWater schemes in particular.

Queensland has provided information that most SunWater Category 3 schemes are at 50 per cent of lower bound cost recovery in 2005–06 and it is intended, where practical, to increase the percentage of lower bound costs recovered from April 2006 to 30 June 2008, thereby reducing the level of community service obligations required. Community service obligations are reported annually by irrigation schemes in SunWater annual reports. In addition, the Queensland Government reports that cross-subsidisation in the rural irrigation schemes has been addressed.

On the basis of the above information, the Commission considers that Queensland has met its COAG commitment to ensuring that community service obligations are separately funded, transparently and publicly reported, and are reducing over time for the SunWater rural schemes. In addition, the Commission considers that Queensland has met its commitment to report cross-subsidies.

### *Regional Water*

While the majority of regional water suppliers are not obliged to adopt COAG principles, around 50 per cent of the regional water suppliers have achieved upper bound pricing. The small regional water suppliers are strongly encouraged by the Queensland Government to implement best-practice pricing, but no formal price paths are in place for them to achieve upper bound pricing. Further information

on the progress of the remaining 50 per cent will be known following the next Queensland Competition Authority report, due in February 2006.

The largest 18 local governments are required to report on the level of community service obligations, and a financial incentive was provided for the remaining 107 councils to undertake similar analysis.

On the basis of the above information, the Commission considers that Queensland has made significant progress toward meeting its COAG commitment with regard to ensuring that community service obligations for regional water suppliers are separately funded, transparently and publicly reported, and are reducing over time.

#### 4.4.2 Cost Recovery for Planning and Management

##### Assessment Issues

Queensland needs to demonstrate that resource management costs are being recovered, consistent with Council of Australian Governments pricing obligations, by showing:

- the extent to which resource management costs are being recovered
- that costs associated with activities undertaken for governments are being recovered
- that prices to recover resource management costs are being independently set or reviewed
- that resource management costs are transparently handled and publicly reported
- that adequate public consultation and education about water management charges has been undertaken, and
- the extent to which costs associated with the provision of licenses for water extraction are being recovered.

In particular, Queensland should:

- report on the outcomes of its review and its water charges and price setting policy
- report on the extent to which licence fees appropriately reflect the private benefits derived from licensing and associated water management, and
- show that its price paths will bring its water management charges more closely in line with costs.

##### Outcome of review

In 2003, interim water charges were introduced while the Queensland Government investigated water pricing more fully. Following independent reviews of the Queensland Government's water management costs, externality costs and water's scarcity value, on 30 August 2005 the government announced new water charges to help recover the costs of planning and management. These charges were introduced on 1 January 2006 (except for local governments, whose budgets are determined until 30 June 2006). The charges cover only the users' share of water management costs calculated using the 'impactor pays' method.

The charges will be in place until 30 June 2011, as is consistent with the SunWater pricing period. Water charges will apply to all water users with an entitlement or authority to take water under the *Water Act 2000*. These charges are differentiated on the basis of three levels:

- the highest priority is given to people and essential industry (charged \$15 per megalitre)
- mining and petroleum companies and all other industrial customers are to be given the next highest priority consideration (charged at \$10 per megalitre), and
- agricultural and other users are given the next priority (charged at \$4 per megalitre or through an annual charge).

Where practical, charges will be based on the volume of water taken (where there are meters or an estimate can be carried out). An additional 16,000 meters will be installed over the next seven years in order to help apply volumetric based charging. Where there is currently no meter, or no meter will be placed, a number of alternative charging methods have been developed.

##### SunWater Planning and Management Costs

The water management costs directly incurred by SunWater after 30 June 2006—as the result of assisting government with the water resource plans and resource operations plans—are to be met by SunWater as part of lower bound pricing for rural irrigation and other customers. A specific community service obligation will be provided by the Queensland Government to cover increased costs in lower bound pricing arising from resource operations plans compliance and other costs (averaging 35 per cent per

scheme), which would have resulted in a price spike for SunWater customers.

Additional costs are expected for the first five years of the new environmental regulations. These increased costs include those associated with water management planning, rights management, and water information management. It was agreed that while some of these additional costs will be passed on to users, based on a right security framework, the remainder would be a community service obligation, as mentioned above.

To date, as part of price setting negotiations, SunWater has presented lower bound historical and forecast costs to irrigators (under confidentiality agreements), including SunWater's water resource management costs.

Where SunWater's planning and management costs cannot be recovered through water prices, SunWater will show that in its annual reports.

#### Costs Associated with Government Activities

It has been calculated that the Department of Natural Resources and Mines spent approximately \$68 million each year (2003–04 figures) on water resource management and planning activities. This figure was analysed in terms of the proportions that could be attributed to impactors and taxpayers. Under an impactor-pays approach, approximately \$37 million could be recovered from water users. The government has supported the impactor-pays assessment as it is consistent with a user-pays pricing method. The cost of licensing is included in the costs of water planning and management.

Government water charges will apply to SunWater at the point of extraction and they will be based on metered take by the service provider. SunWater will then pass the state water charges on to customers (except for water charges applying to 'off-stream' or channel distribution losses). The government water charges that are passed on must be identified as a separate item on SunWater invoices. Revenue collected by SunWater will be passed back to the Queensland Government.

Only the Department of Natural Resources and Mines water management and planning costs are to be (partially) recovered. Ministerial and Parliamentary services costs have explicitly been excluded from the proposed water charges.

In addition, only entitlement holders under the Queensland *Water Act 2000* will pay the water charges—Border Rivers users with such entitlements will pay the same charges as other Queensland users.

#### Costs Independently Set or Reviewed and Transparently Handled and Reported

While the Queensland Competition Authority reviews charges on a referral basis, the Queensland Government used information prepared by independent consultants to determine the foundations for water charges. This process was done in consultation with the community, including a discussion paper and submission process. The consultants investigated water management charges, externalities and the scarcity value of water. The policy is based on, and is predominately consistent with, the consultants' findings and recommendations.

In addition, the Department of Natural Resources and Mines has agreed to conduct a review of the charges with key stakeholders and the Queensland Treasury Corporation. This review will determine whether the water charges are transparent and equitable, as well as whether the Department of Natural Resources and Mines costs are efficient. The review will be completed in 2011.

#### Public Consultation and Education

The government engaged stakeholders and the community in the review. The discussion paper was prepared by the Department of Natural Resources and Mines, in consultation with principal stakeholders providing input into the key issues addressed and the policy options made available for developing the final water charges policy. The paper outlined the key policy issues and provided 'talking points' to generate discussion. After being released, the consultants' reports were publicly available as reference documents for the discussion paper.

Stakeholders were consulted after the release of the discussion paper. On release of the water resources charges discussion paper, the government continued consultation with key stakeholders and the broader irrigation community. Departmental officers travelled to the regions presenting the key elements of the discussion paper and interested parties were invited to make submissions.

## Submissions

The Queensland Farmers' Federation submission raise issues of rural pricing. Some of the issues raised by the Queensland Farmers' Federation are directly related to the 2005 National Competition Policy assessment of Queensland's progress in meeting COAG water reforms, while others are relevant to the water reform process more generally.

The Queensland Farmers' Federation emphasises the issue of the delay in reviewing the transparency in water resource planning and management charges.

## Discussion and Assessment

### Recovering Water Planning and Management Costs

In 2003 Queensland introduced interim water charges while the government investigated aspects of water pricing more fully. As a result of the investigations, new water charges to help pay for planning and management have been set and will be introduced from 1 January 2006. The outcome of the review was reported by Queensland, and the new charges and price-setting policy were discussed.

On the basis of the above information, the Commission considers that Queensland has met its COAG commitment with regard to reporting on the outcomes of its review and the policy and proposed charges.

The new water planning and management charges will recover the users' share of water management costs that are directly incurred by the Department of Natural Resources and Mines. Of the estimated \$68 million that the Department spends, \$37 million will be recovered from users on an impactor-pays basis.

Also addressed are the costs that SunWater incurs as the result of assisting the Queensland Government with the water resource plans and resource operations plans. It was agreed that while some of these additional costs will be passed on to users, based on a right security framework, the remainder would be a community service obligation.

On the basis of the above information, the Commission considers that Queensland has made progress toward meeting its COAG commitment in regards to demonstrating that water resource management costs are being recovered and the extent to which they are being recovered.

Queensland reports that the costs of licences are included in water planning and management charges to be recovered. On this basis, the Commission considers that Queensland has met its COAG commitment to recover the costs associated with the provision of licences for water extraction.

Queensland provided no information to indicate whether these licence fees appropriately reflect the private benefits derived from being licensed. As such, the Commission considers that there is a lack of available information to assess whether Queensland has met its COAG commitment with regard to the setting of licence fees.

### Transparency

Queensland reported that the government water charges policy was developed in consultation with the community and stakeholders, satisfactorily meeting this COAG commitment. All reports throughout the process were publicly available and there were opportunities for public comment and submissions. In addition, the water planning and management charges are identified as a separate item on customers' water bills.

On the basis of this information, the Commission considers that Queensland has met its COAG commitment with regards to the transparent handling and public reporting of resource management costs.

The policy guidelines surrounding the determination of resource management charges were developed based on the findings of independent consultants. Queensland believes the framework on which the charges are based is predominately consistent with the independent results and recommendations.

In addition, the Department of Natural Resources and Mines has agreed to conduct a review of the charges, to be completed in 2008. The review will determine the transparency and equity of the charges, as well as whether the Department of Natural Resources and Mines costs are efficient.

On the basis of the above information, the Commission considers that Queensland has made some progress toward meeting its COAG commitment with regard to the independent setting or reviewing of water resource management charges. While the charges were set on



the basis of independently gathered information, the Commission considers that a process involving greater independence and transparency would better meet the COAG commitment for review of the charges, noting that this review is not to be completed for another three years. While the Commission notes that the Queensland Farmers' Federation raised the issue of the timing of the review of the management charges, the Commission considers that this timeframe will allow for many of the pricing issues to be tested in practice.

#### 4.4.3 Investment in New or Refurbished Infrastructure

##### Assessment Issues

The Commission will examine compliance where Queensland has decided to proceed with a particular project. In conducting its assessment, the Commission will consider:

- the extent to which the economic viability\* and ecological sustainability credentials of infrastructure proposals have been established prior to works commencing
- the environmental assessment processes for all projects, whether publicly or privately funded, and
- the economic viability appraisals of new or refurbished infrastructure proposals only to the extent of governments' funding contribution.

For the 2005 National Competition Policy assessment, Queensland will need to demonstrate that its water infrastructure projects are ecologically sustainable, are approved under Queensland and Commonwealth environmental approval processes, and meets all conditions imposed by these processes, to comply with COAG obligations.

**The National Competition Council previously assessed elements of Queensland's Burnett Water Infrastructure Project: the Burnett River Dam, Kirar (formerly Eidsvold) Weir, Barlil Weir and the Jones Weir Raising. Only the Ned Churchward Weir remains to be assessed. However, no decision to proceed on this project was made in 2005.**

\* The NCC 2004 National Competition Policy Assessment explained the economic viability test as involving consideration of whether a project will deliver an overall public benefit to Australia. Commercial or financial viability is an important element, "a project that is not commercially viable may still satisfy the economic viability test if there is robust evidence that the project will deliver a net social benefit that outweighs the costs of not being commercially viable".

SunWater is progressing a two-stage feasibility study on the viability of a new project to transport water from the Burdekin River south 130 km along the coastal plain to Bowen—the Water for Bowen project. Stage two economic and environmental investigations are planned to commence in 2006. Construction is not underway and no decision has been made for such a channel.

**South East Queensland Infrastructure Plan and Program**  
In 2005, Queensland released the *South East Queensland Infrastructure Plan and Program 2005–2026* which has a focus on investment in infrastructure (OUM, 2005a).

The Queensland report also outlined the strategic priorities for water in the program, including increasing the supply of water to accommodate growth in the region. Two components of that strategy are proposals for a new weir on the Logan River at Cedar Grove and a new weir on the Mary River. Both of the weir projects are targeted for implementation over four financial years, commencing 2005–06 and ending 2008–09. Assessing the proposed weir projects against State and Commonwealth economic viability and ecological sustainability criteria commenced late 2005.

The Gold Coast City Council issued a 'request for proposals' tender on 5 September 2005 for the Gold Coast Desalination Project to develop, design, construct, operate and maintain a 55 megalitres per day desalination plant. It is understood this project is also part of the South East Queensland Infrastructure Plan and Program 2005–2026.

Queensland advised that the Gold Coast City Council is investigating desalination as a contingency measure in case drought continues through this summer, and other sources of water are needed to deal with potential failures in existing water supplies. A decision to construct was not made during 2005.

##### Cairns Water Supply

Cairns City Council is undertaking investigation into preferred water infrastructure. A pump station on the Barron River is one of the options identified in the Cairns Least Cost Planning Study for providing water for Cairns city's future water supply needs. No decision to proceed was due in 2005.

## Discussion and Assessment

For all the identified infrastructure developments a formal decision to proceed has yet to be made. The Commission notes that most of these are for enhancing urban water supplies.

### 4.4.4 Release of Unallocated Water

#### Assessment Issues

The Commission will look for Queensland to demonstrate that any releases of unallocated water, including recycled or other sources of water, are occurring in a manner that complies with its COAG water reform obligations. In particular, the Commission will consider whether:

- water plans have increased allocations to consumptive use
- the water required to achieve environmental outcomes is adequately met prior to the release of unallocated water
- the impact on the environment is considered before any new entitlements are issued
- all other avenues for meeting demand have been carefully examined, and
- market-based mechanisms are employed in the release of unallocated water, including recycled water.

For the 2005 National Competition Policy assessment, the Commission will look for Queensland to:

- demonstrate that the water required to achieve environmental outcomes for the Dawson and Burnett Rivers will be adequately met prior to the construction and operation of the Nathan and Burnett Dams, and
- outline its arrangements for allocating water from the Nathan and Burnett Dams.

The Queensland *Water Act 2000* provides for mechanisms for dealing with unallocated water, through water resource plans and resource operations plans. Queensland reports that:

- up to 44 gegalitres of identified volumes of water subject to future release processes have been publicly announced
- several release processes were to commence in 2005, and

- the water supply strategies in progress in Central, South East and Far North Queensland, and the water resource plan programme, are likely to identify other, probably much larger, volumes of unallocated water. In the Fitzroy River, where the largest volumes have been identified for possible release (up to 260,000 megalitres in total), the Central Queensland Water Supply Strategy will play a key role in informing any releases to any possible new water infrastructure projects.

On 4 December 2003, the Queensland Government endorsed a set of policy principles to guide decisions regarding the release of unallocated water. Publicly released in 2004, the principles state that:

- unallocated water should only be released where alternative ways of meeting water demands from existing water sources, such as through water trading, making use of the unused parts of current water entitlements, or by increasing water use efficiency, have been fully explored, and
- where releases do occur this should be through market-based mechanisms and a reserve price should be used to prevent water being sold at below its likely value, to guard against price manipulation or collusion, and, where demand is low, to allow water to be re-auctioned at a later date when demand is likely to be higher.

#### Burnett Water Infrastructure Project

Queensland reported that the Water Resource (Burnett Basin) Plan 2000, and amendment under the *Water Infrastructure Development (Burnett Basin) Act 2001*, provides the basis for the sustainable development of the Burnett Water Infrastructure Project. In late 2003, the National Competition Council released its assessment of the project, confirming that the Burnett River Dam and associated weirs have been shown to be ecologically sustainable, in accordance with the COAG requirements.

The Burnett Basin Resource Operation Plan, developed to implement the outcomes of the water resource plan and guide the day-to-day management of stream flows and water infrastructure, was first released in June 2003. As each component of the Burnett Water Infrastructure Project approaches completion, the *Burnett Basin Resource Operations Plan* will be amended to allow for the operation of each piece of infrastructure, in accordance with the

infrastructure allocations outlined in the Water Resource (Burnett Basin) Plan 2000, and amendment under the *Water Infrastructure Development (Burnett Basin) Act 2001*.

Queensland indicate that a proposed amendment to the Act for Burnett River Dam in late 2005 is to include rules for the operation of infrastructure, including environmental management rules for specific releases. These releases are required to ensure outcomes of the plan are achieved. Burnett River Dam will have a requirement to pass significant flows, which will be in accordance with specified inflow conditions.

Allocations of water created by the Burnett River Dam are to be distributed via competitive sales processes, with the features reported by the state in previous National Competition Policy assessments. For example, features such as open tenders with unrestricted volumes and non-disclosed reserve prices designed to enable suitable cost recovery. The tender process for water from Kirar Weir (formerly Eidsvold Weir) commenced in July 2005.

The tender process for water from the Burnett River Dam was anticipated to commence in late 2005. Queensland proposes that tender processes will be run on a quarterly basis.

### Discussion and Assessment

The Queensland processes for determining if there is unallocated water are largely dependent on planning systems identifying unallocated water or infrastructure developments 'creating' water for allocation. Waters identified through the planning systems should, by default, already meet the environmental requirements for unallocated water. Unallocated water is only released when all other alternatives have been fully explored.

Once identified as unallocated water, the mechanisms for its release for consumptive use using market mechanisms are in accord with the COAG principles. For the purpose of this assessment, therefore, the Commission considers that Queensland has met its COAG commitment in this area.

## 4.4.5 Environmental Externalities

### Assessment Issues

Queensland is required to:

- report the extent to which they are identifying and recovering environmental costs through their pricing regimes
- provide evidence that environmental costs imposed on and incurred by water businesses are transparently passed on through prices charged to water users
- where externalities are not included on pricing regimes, demonstrate price paths that will move towards achieving full cost recovery within a reasonable timeframe, and
- where not transparently incorporated into pricing regimes, show that they have identified externalities and, after examination, have concluded that inclusion of an externality in pricing is not feasible or practical.

Queensland is also required to report on:

- the outcomes of the review and its implementation of review recommendations, and
- its approach to the transparent treatment of externalities, consistent with the requirement to robustly and transparently allocate costs among water users, and the principle of linking charges as closely as possible to the costs of activities and products.

### Outcomes of the Review and Approach to Externalities

An independent review of the costs of externalities was undertaken in Queensland. This review identified all externalities; who causes them, the current treatment of externalities, and what externalities are not covered by existing policies. The report (part of the *Review of the Value of Water*) on externalities found that most water take and water use externalities are already addressed by the water planning process and other regulatory planning instruments. It was concluded that any outstanding externalities are best dealt with on a case-by-case basis using a variety of measures (possibly including a locally tailored charge). The independent review recommended that a generalised statewide externality charge was not advisable (DNRM, 2003e).

As recommended by the independent consultants, Queensland will continue to address externalities through regulatory planning instruments, which include the following:

- for externalities associated with the extraction, storage and delivery of water—water resource plans and resource operations plans will be the regulatory instruments used to manage consumptive water use and environmental needs. Catchment-based plans aim to balance water availability for current and future water demands across different types of water users, and give people a more secure and reliable allocation. A secure allocation is also provided to the environment. This allocation must be sufficient to maintain the ecological health of aquatic ecosystems and the plants and animals that depend on them, and
- for externalities associated with the application of water—land and water management plans and water use plans are the regulatory mechanisms.

Land and water management plans describe infrastructure, natural resources and management practices in the use of land and water resources. They are prepared by individual landholders to plan the productive, profitable and sustainable use of water for irrigation purposes.

Rural industries in Queensland have adopted a strategy to implement farm management systems as a business management tool and as a means of demonstrating due diligence in environmental and natural resource management matters. The state government is supporting this initiative and has signed a memorandum of understanding with the Queensland Farmers' Federation to initiate a partnership approach to advance the industry-led farm management systems programs.

Farm management systems programs are designed to integrate the management of natural resources—including environmental values—into a whole-of-farm business management system. They also aim to promote awareness and understanding of landscape and regional natural resource management priorities. It is expected that an industry-driven approach is likely to achieve a greater uptake in the adoption of good practice in irrigation management. A framework has been developed that allows

state government agencies to consider for accreditation industry developed farm management systems programs.

A water use plan is a planning instrument in the *Water Act 2000* to overcome the adverse impacts of water use on natural resources. This allows the government to declare an area where certain water use practices are to be adopted to address particular issues of resource degradation. The Act identifies a number of triggers such as rising groundwater levels, increasing salinisation, deteriorating water quality, and water logging of soils as reasons to initiate a water use plan.

### Discussion and Assessment

Queensland reported on the outcomes of its environmental externality review, providing information on the identification of environmental externalities throughout the state. The outcomes advised against a statewide externality charge, in favour of addressing externalities through management plans.

On the basis of this information, the Commission considers that Queensland has met its COAG commitment to identify environmental externalities.

As the review determined that a statewide externality charge was not applicable, Queensland is addressing environmental externalities of water use through water planning and management instruments only. The review advised that any outstanding externalities are best dealt with on a case-by-case basis using a variety of measures, including a locally tailored charge, to be reviewed in June 2008.

On the basis of the above information, the Commission considers that Queensland has met its COAG commitment to identify and recover externality costs through pricing regimes.

#### 4.4.6 Institutional Reform

##### Assessment Issues

##### *Independent price regulator*

Queensland is required to:

- report on the role of economic regulators in setting or reviewing prices
- the extent to which conflicts of interest are addressed

where the water industry regulator and the service provider are responsible to the same Minister

- report on the public reporting and consultation aspects of the independent body's work, and its findings in relation to pricing compliance, and
- where the independent body's role is to review rather than set prices, Queensland is to report on the extent to which the results of reviews are addressed by the government, especially where pricing decisions are at variance with pricing recommendations.

In particular Queensland is to report on:

- the extent to which the Queensland Competition Authority's prices oversight powers are being used in the water sector, including the proportion of water and wastewater businesses declared for prices oversight.

#### *Participation in benchmarking processes*

The Commission will look for Queensland to demonstrate that participation is continuing, to demonstrate that there has not been a decline in participation, for metropolitan, non-major urban and rural service providers.

#### *Benchmarking the performance of water authorities – progress with development of a national framework*

Queensland is required to demonstrate that it has made progress with the development of a national framework for benchmarking of pricing and service quality for metropolitan, non-metropolitan and rural water delivery agencies, including whether appropriate consultation has occurred.

#### **Independent Price Regulator**

**The economic regulation of Queensland's water markets is undertaken by the Queensland Competition Authority, pursuant to the Queensland Competition Authority Act 1997. Under the Act, the Queensland Competition Authority has the responsibility for monopoly prices oversight, which applies to:**

- **government monopoly (or near monopoly) business activities with the Queensland Competition Authority holding recommendatory powers, and**
- **water suppliers, as defined by the Queensland Competition Authority Act, with the Queensland Competition Authority holding deterministic powers.**

**Through the prices oversight process, the Queensland Competition Authority investigates the pricing practices of government monopolies. An investigation can be started only if requested by the Premier and the Treasurer (the ministers)—the Authority cannot otherwise start an investigation. During 2004–05, there was one prices oversight investigation by the Queensland Competition Authority.**

**In the instance of Queensland's largest water company, SEQWater, the Queensland Competition Authority can undertake an investigation without the need for a referral from the ministers.**

**The level of public consultation required is specified in the referral notice. In practice, all pricing investigations have involved public consultation through the provision of a draft report for public comment. Final reports are published by the Queensland Competition Authority and a public register of recommendations is maintained by the Queensland Competition Authority.**

**In Queensland, government owned corporations have had the Treasurer and the responsible portfolio minister as shareholding ministers. Potential conflicts of interest are mitigated as the area in Treasury that advises the Treasurer of Queensland Competition Authority issues is separate from that which advises the Treasurer on shareholding issues. Furthermore, the potential for conflicts of interest to materialise are minimised by there being two shareholding ministers for government owned corporations and two ministers responsible for the Queensland Competition Authority. Under new administrative arrangements, there is a greater separation as the shareholding ministers now comprise the Minister for Finance and the relevant portfolio minister, with the Queensland Competition Authority ministers remaining the Premier and the Treasurer.**

**To date, the Queensland Government has accepted all water pricing recommendations made by the Queensland Competition Authority, and implemented all of the recommended pricing practices.**

**During 2004–05, pursuant to a government direction, the Queensland Competition Authority made a report containing a number of recommendations in relation to the pricing practices of the Gladstone Area Water Board and an appropriate framework for the monitoring of those practices**

(including prices and contractual arrangements). It did not report any non-compliance with previously recommended (and accepted) pricing practices.

#### Benchmarking

The number of Queensland participants in the Australian National Committee on Irrigation and Drainage report has remained constant since its inception. The participants are SunWater, Pioneer Valley Water Board, North Burdekin Water Board, and South Burdekin Water Board.

Brisbane Water, Gold Coast Water, Ipswich Water, Logan Water, Maroochy Water Services, NQWater, and SEQWater all participate in the benchmarking framework managed by the Water Services Association of Australia.

While the Australian Water Association report was discontinued in 2000, Queensland has continued to collect benchmarking data from these participants. A Queensland report is published on the Department's website. Anywhere from 15 to 21 participants have been part of the Queensland version of the Australian Water Association report. In addition, the Department of Local Government Planning, Sport and Recreation publish an annual Queensland local government comparative information report. Queensland has 124 participants in this report.

### Discussion and Assessment

#### Independent Price Regulator

The Queensland Competition Authority is the economic regulator for Queensland, and it is involved in the price oversight of government monopolies. The instance of an investigation depends on the referral the Queensland Competition Authority receives from the Premier and the Treasurer. Investigations by the Queensland Competition Authority are publicly available, and are conducted with appropriate consultation. The findings of investigations are published, and a public register of recommendations is maintained by the Queensland Competition Authority.

On the basis of this information, the Commission considers that Queensland has met its COAG commitment with regards to the role of the state regulator, and the public reporting and consultation that occurs with investigations.

Queensland has attempted to mitigate potential conflicts

of interest by ensuring that the area in Treasury that advises the Treasurer on Queensland Competition Authority issues is separate from that which advises the Treasurer on shareholding issues. Furthermore, there are two shareholding ministers for government owned corporations and two separate ministers responsible for the Queensland Competition Authority.

On the basis of the above information, the Commission considers that Queensland has met its COAG commitment with regard to the processes in place to mitigate conflicts of interest in the operations of the Queensland Competition Authority.

In 2004–05, the Queensland Competition Authority made one prices oversight investigation for the Gladstone Area Water Board. The investigation resulted in a number of recommendations to pricing policies. To date, the Queensland government has accepted all water pricing recommendations made by the Queensland Competition Authority, and implemented all of the recommended pricing practices.

On the basis of the above information, the Commission considers that Queensland has met its COAG commitment to report on the extent to which the oversight powers of the Queensland Competition Authority have been used.

However, the referral process for the use of the Queensland Competition Authority means that its effectiveness in practice depends on the extent to which the government chooses to get the Authority involved in the scrutiny of pricing matters. The Commission will therefore maintain a watching brief on the effective use of the independent body.

#### Benchmarking

The major metropolitan water and wastewater businesses participate in the benchmarking framework managed by the Water Services Association of Australia. In addition the number of Queensland participants in the Australian National Committee on Irrigation and Drainage report has remained constant since its inception.

On the basis of the above information, the Commission considers that Queensland has met its COAG commitment with regards to its participation in the benchmarking processes for these service providers.

The Commission also notes that the Queensland Government is participating in development of a national framework for benchmarking of pricing and service quality in the context of implementing the National Water Initiative. On this basis, the Commission considers that Queensland has met its COAG commitment to progress the national benchmarking framework.

## 4.5 Integrating Water Management for Environmental and Other Public Benefit Outcomes

### 4.5.1 Institutional Arrangements

#### Assessment Issues

Water planning frameworks are to provide for adaptive management of surface and groundwater systems in order to meet productive, environmental and other public benefit outcomes; to identify the environmental and other public benefit outcomes sought for water systems; and to develop and implement management practices and institutional arrangements that will achieve those outcomes.

To this end, Queensland has agreed to establish effective and efficient management and institutional arrangements under the National Water Initiative.

For the 2005 National Competition Policy assessment, the Commission is looking for Queensland to have progressed its implementation of effective and efficient management and institutional arrangements to ensure the achievement of environmental outcomes.

The Commission is also looking for Queensland to describe the public education and consultation activities undertaken in relation to the integrated management of environmental water.

#### Effective and Efficient Management and Institutional Arrangements

Queensland's *Water Act 2000* provides the legislative framework to deliver the state's water planning, allocation, management and supply processes. The Act also formally recognises environmental flows.

Catchment-based water resource plans are the principal water planning instrument under the *Water Act*. As well as providing secure titles for consumptive uses, water

resource plans also provide for environmental water allocations. These allocations must be sufficient to maintain the ecological health of aquatic ecosystems by taking into account river flow regimes—such as volume, timing, seasonality, and duration.

Environmental water allocations are delivered through flow rules. Resource operations plans detail these rules, which range from environmental flow releases from storages to restricting water extraction opportunities in both high and low flow conditions.

The organisational arrangements in Queensland for managing environmental water include the following.

The Department of Natural Resources and Mines is responsible for:

- preparing water resource plans and resource operation plans in consultation with community reference panels
- ensuring that environmental water identified in water resource plans is delivered, as specified in resource operation plans, and
- undertaking monitoring and assessment activities as required under water resource plans.

Water infrastructure operators, such as the Queensland Government-owned corporation SunWater, are required to comply with the management rules within resource operation plans to meet environmental water objectives.

Other features of environmental water management that Queensland considers significant are discussed below.

#### *Shared Resources between Jurisdictions*

Queensland is currently reviewing the institutional arrangements for water service delivery and management in the Border Rivers catchments, in cooperation with the New South Wales Government.

In February 2004, the Border Catchments Ministerial Forum agreed to a statement of principles as a first step to developing a new Border Rivers Intergovernmental Agreement for water management. The new agreement aims to be consistent with the National Water Initiative and to establish appropriate frameworks for water sharing between the states, environmental water use, water pricing and interstate trade. Queensland anticipates that the agreement will be completed by 30 June 2006.

The Queensland Government is also a signatory to the Lake Eyre Basin Intergovernmental Agreement, along with the Australian, South Australian and the Northern Territory governments. The agreement provides for the sustainable management of the water and related natural resources associated with cross-border river systems in the Lake Eyre Basin to avoid downstream impacts on associated environmental, economic and social values.

#### *Inter-connected Surface and Groundwater Systems*

Queensland advises the Commission that whilst water resource plans have initially focused on surface water, key plans such as the Burnett and Pioneer plans, are being amended to include groundwater. These amendments acknowledge that groundwater must be included in water resource plans where groundwater extraction affects surface water entitlements, as required by the *Water Act 2000*.

Queensland also reported that it is currently commissioning a study to assess the risk of groundwater allocation impacting on surface water flow and surface water entitlements across the state. A draft report has already been submitted and is due for finalisation in the first quarter of 2006.

#### *Audit, Review and Public Reporting Procedures*

Queensland reports that the effectiveness of flow management strategies and rules in achieving a water resource plan's environmental and other public benefit outcomes is regularly monitored, assessed and publicly reported. For example:

- the Department of Natural Resources and Mines must prepare annual reports on the implementation of individual water resource plans, including the results of monitoring and the achievement of ecological goals
- water infrastructure operators must submit quarterly and annual reports on the quantity and quality of water, how much is taken and its use; this is to ensure usage and environmental requirements of individual water resource plans are being met, and
- water resource plans must be reviewed after ten years, at which time the management strategies and rules may be amended if needed to achieve the desired outcome.

#### *High Conservation Value Rivers, Reaches and Groundwater Areas*

Technical advisory panels identify areas and species of significant conservation value in each water resource planning area, and recommend corresponding water allocations and management arrangements that consider these values. For example, the Condamine and Balonne Water Resource Plan identifies four important ecological assets, including Narran Lakes and the National parks of the Culgoa floodplain. The plan states that water is to be allocated and managed in a way that seeks to maintain the success of bird-breeding in the Narran Lakes and on the floodplains; and the condition of the Narran Lakes and the National Parks of the Culgoa floodplain.

The recently passed *Wild Rivers Act 2005* also recognises high conservation value rivers by providing a framework for preserving iconic rivers that have natural values and are comparatively untouched by development. The Act contains numerous protection provisions to preserve the identified natural values, including strictly limiting and regulating water allocations or water extractions in declared wild rivers.

#### *Public Education and Consultation Activities*

Water resource planning in Queensland requires public notification and the establishment of community reference panels under the *Water Act 2000*. Community reference panels are formed to ensure community consultation informs the development of water resource, and resource operation plans. Panels must include representatives of cultural, economic and environmental interests in the plan area. Significant matters to do with water resource plans and resource operation plans are taken to the community reference panel.

The *Water Act 2000* also requires the Minister to report within 30 days of approving a water resource plan on the public consultation process and how issues were dealt with.



## Discussion and Assessment

### Effective and Efficient Management and Institutional Arrangements

Queensland's current legislative and administrative procedures include arrangements for managing water for environmental and public benefit outcomes.

Queensland's *Water Act 2000* provides the legislative framework to deliver improved water planning, allocation, management and supply processes, and to ensure the statutory recognition of environmental flows. The Commission acknowledges that Queensland is continuing to establish management and institutional arrangements to support implementation of the environmental water provisions under the Act.

The Commission notes that Queensland has identified the Department of Natural Resources and Mines as its environmental water manager.

The Commission concurs with Queensland that the *Water Act 2000* has improved the state's ability to plan for significantly interconnected groundwater and surface water systems. Queensland is currently amending a number of its water sharing plans to include common water sharing arrangements in areas with significantly interconnected systems.

The Commission understands that water resource plans and resource operations plans together describe the monitoring and review procedures for assessing whether environmental water outcomes are being met. Because these activities are the responsibility of the Department of Natural Resource and Mines, the Commission is concerned that Queensland does not yet have arrangements for the independent review of water management plan outcomes.

Queensland does not provide for the trade of environmental water on the temporary market. Environmental water is protected in Queensland and is not available for trading. This partly reflects the fact that most environmental water is provided via flow rules—by restricting water extraction opportunities in both high and low flow conditions.

On the basis of the above discussion, the Commission considers that Queensland is making satisfactory progress towards meeting its COAG commitment in this area.

### Public Education and Consultation

The Commission considers that Queensland has demonstrated the adequacy of public consultation mechanisms in place in relation to the integrated management of water for environmental and other public benefit outcomes. Public consultation processes for water resource planning include the establishment of technical advisory panels, community reference panels and water advisory groups.

Queensland has not described any existing or planned activities for educating the public about the environmental and other public benefits associated with allocating water to the environment. It would appear to the Commission that public education of this nature is narrowly targeted at community reference panels.

Overall, the Commission considers that Queensland is making satisfactory progress towards meeting its COAG commitment in this area.

## 4.6 Water Resource Accounting

### 4.6.1 Benchmarking of Accounting Systems

#### Assessment Issue

The Commission is looking for Queensland to be actively engaged in the national benchmarking of jurisdictional water accounting systems, to allow for the development of a national framework for comparison of water accounting systems to encourage continuous improvement leading to the adoption of best practice.

Queensland is involved in a national process to benchmark water accounting systems. Through this process, Queensland has committed to provide full access to its existing water accounting and entitlement registry systems and to other relevant water databases.

## Discussion and Assessment

The Commission considers that Queensland is satisfactorily progressing its COAG commitment to benchmark existing water accounting systems.

## 4.6.2 Consolidated Water Accounts

### Assessment Issue

Queensland is to identify situations where close interaction between groundwater aquifers and streamflow exist by the end of 2005, to support the integration of accounting for groundwater and surface water use.

Queensland water resource planning processes identify surface and groundwater interaction. The planning process establishes a single water plan for each catchment. The functional relationship between groundwater and surface water systems is considered through this planning process, with the catchment water balance determined using a single flow model that integrates the groundwater and surface water systems. Managing interconnected systems as a single resource will facilitate integrated accounting of groundwater and surface water. Queensland intends to finalise its water resource plans and implement them through finalised resource operations plans by 2009.

Queensland advises that it is also currently commissioning a study to assess the risk of groundwater allocations impacting on surface water flow and surface water entitlements across the state.

### Discussion and Assessment

The Commission notes Queensland has a process in place to identify surface and groundwater interactions. The Commission encourages Queensland to give a high priority to the proposed study on the risks of groundwater allocation impacts on surface water flows. The Commission considers that Queensland is satisfactorily progressing its COAG commitments in this area.

## 4.6.3 Environmental Water Accounting

### Assessment Issue

The Commission is looking for Queensland to have commenced the development of:

- a compatible register of new and existing environmental water, showing all relevant details of source, location, volume, security, use, environmental outcomes sought, and type, and

- annual reporting arrangements to include reporting on the environmental water rules, whether or not they were activated in a particular year, the extent to which rules were implemented and the overall effectiveness of the use of resources in the context of the environmental and other public benefit outcomes sought and achieved.

Queensland is engaged in the national process to develop and adopt characteristics for compatible environmental water registers and principles for environmental water accounting.

Queensland is of the view that an environmental water register is not applicable for Queensland, because environmental flows are provided for through a rules-based approach in the water resource planning process. Consequently Queensland is unable to report environmental volumes in any type of environmental water register.

Environmental water is monitored under water resource and resource operations plans. Under the plans, water service providers must make quarterly and annual reports on the quantity and quality of water, how much is taken and its use.

### Discussion and Assessment

As is consistent with its COAG commitments, Queensland has agreed to develop a compatible register of new and existing environmental water, showing all relevant details of source, location, volume, security, use, environmental outcomes sought and type. Environmental water covers all water provided for the environment, whether that water is held under an environmental entitlement or provided on a rules basis.

Further, through its participation in the national process to develop characteristics for compatible environmental water registers, Queensland has committed to continue to work to develop approaches for the registration of water that is provided for the environment on a rules basis.

The Commission is concerned that Queensland currently fails to acknowledge its COAG commitment to develop an environmental water register and notes that Queensland's justification for this is not consistent with the wording or intent of the National Water Initiative. As such, the Commission considers that Queensland is not yet making satisfactory progress towards meeting its COAG

**commitments to environmental water accounting. The Commission and Queensland will continue to engage on this issue.**

#### 4.6.4 Reporting

##### Assessment Issue

The Commission expects Queensland to be engaged in a process to develop national guidelines covering the application, scale, detail and frequency for open reporting, addressing:

- metered water use and associated compliance and enforcement actions
- trade outcomes
- environmental water releases and management actions, and
- availability of water access entitlements against the rules for availability and use.

**Queensland advises that detailed annual reports are published for the Cooper Water Resource Plan and those basins covered by resource operations plans. These reports record major water statistics covering how much water is available, how much is used, and whether environmental flow objectives are being met. Information includes:**

- all existing performance data for water resource plans
- environmental flow objectives
- rainfall, water entitlements, and use in each catchment, and
- markets and traded water prices.

**Queensland is currently participating in a national process to develop national water accounting and reporting guidelines that will be applied to existing and any expanded systems.**

##### Discussion and Assessment

**The Commission considers that Queensland is satisfactorily progressing its COAG commitment to develop national guidelines for reporting water use and management information.**

## 4.7 Urban Water

### 4.7.1 Demand Management

#### Assessment Issues

The Commission will assess:

- whether Queensland has implemented the Water Efficiency Labelling and Standards Scheme, including mandatory labelling and minimum standards for agreed appliances, and are undertaking compliance monitoring, and
- the extent to which the implementation of the Water Efficiency Labelling and Standards Scheme has been actively communicated to consumers.

The Commission will also look for Queensland to report on progress with the review of water restrictions and the implementation of management responses to supply and discharge system losses.

#### Implementation of the National Water Efficiency Labelling and Standards Scheme

**The necessary documentation to introduce a state-based Water Efficiency Labelling and Standards Scheme in Queensland is being progressed by the Environmental Protection Agency. It is anticipated that Queensland's legislation will commence in the middle of 2006. It will mirror national legislation. Under the proposed state-based legislation, Queensland may defer its monitoring powers to the national regulator. The Environmental Protection Agency has promoted the Water Efficiency Labelling and Standards Scheme to industry and retailers. More than 100 delegates attended the Water Efficiency Labelling and Standards Scheme legislation 'roadshow' held in Brisbane. To further promote the scheme, the Environmental Protection Agency will undertake additional state-based promotions once legislation has been approved.**

#### Review of Water Restrictions and Implementation of Management Responses

**In June 2005, the Department of Local Government, Planning, Sport and Recreation released the South East Queensland Regional Plan following a public consultation process. This plan makes reference to developing best practice guidelines for permanent low-level restrictions on exterior water**

use. This project, which has just recently commenced, will involve a review of the effectiveness of permanent water restrictions on outdoor uses. The Queensland Government is also currently awaiting advice from Natural Resource Management Ministerial Council and the Commission to determine whether it was intended that a review on the effectiveness of the water restrictions be conducted on a national or state-by-state basis.

#### Water Supply and Discharge System Losses

On 11 May 2005, Queensland Parliament passed amendments to the *Water Act 2000*. These amendments addressed issues raised by the Queensland Water Efficiency Taskforce and in the National Water Initiative to minimise leakage loss from water service providers' distribution systems. The legislation will commence on 1 October 2005. Water service providers will be required to prepare and implement system leak management plans to minimise water losses, providing it is cost-effective for the service provider. These plans must be approved by the regulator.

In December 2004, the Department of Local Government, Planning, Sport and Recreation released the *Towards Sustainable Housing in Queensland Discussion Paper* (LGP, 2004) for public comment. Sustainable housing initiatives in the discussion paper are divided into two stages. Stage 1 measures will be applied to new Class 1 buildings (detached and semi-detached houses). Under changes to building regulations, all new homes from 1 March 2006, in areas with high water pressure, must include water pressure limiting devices to restrict maximum water pressure to no more than 500 kilopascals.

The Queensland Government, through the Environmental Protection Agency, is also supporting pilot projects to assist local governments to plan and implement leakage and pressure management programs and has developed a set of manuals supported by training workshops that have been held across the state.

#### Discussion and Assessment

The Commission considers that Queensland has met its COAG commitments in relation to the national Water Efficiency Labelling and Standards Scheme. The review of water restrictions and the implementation of management responses to supply and discharge system losses are ongoing actions.

### 4.7.2 Innovation and Capacity Building to Create Water Sensitive Australian Cities

#### Assessment Issues

The Commission will assess whether Queensland has:

- developed and applied national health and environmental guidelines for recycled water and stormwater
- commenced a process to evaluate existing 'icon' water sensitive urban developments to identify knowledge gaps and lessons for future strategically located developments, and
- undertaken adequate public consultation and education as part of these commitments.

#### Recycled Water and Stormwater Guidelines

The *Queensland Water Recycling Guidelines* were published in December 2005. They contain information and advice specific to Queensland and show how the national framework for water recycling will be applied in Queensland. Further guidance in Queensland will be provided for South East Queensland. Also guidance will be provided by the *Model Urban Stormwater Quality Management Plans and Guidelines* (EPA Queensland, 2001) and by the *Queensland Urban Drainage Manual* (QUDM, 1994) (the industry standard for the design of stormwater systems with respect to public safety and the prevention of flooding (stormwater quantity)).

A review of the *Queensland Urban Drainage Manual* (among other things) will provide stormwater systems designers with the links between designing systems that address stormwater quantity and meeting stormwater quality and stormwater resource objectives. The review is being undertaken by the Department of Natural Resources and Mines with the Institute of Municipal Engineers Association of Queensland and the Brisbane City Council; it is expected to be completed by September 2006. The Department of Natural Resources and Mines intends to start regulating recycled water. The government's Queensland Water Efficiency Taskforce—jointly chaired by the Ministers for Environment and for Natural Resources and Mines—has committed to develop an integrated statutory framework. This is expected to be in place by December 2006.

#### Evaluation—‘icon’ Water Sensitive Urban Developments

The Queensland Government is currently seeking advice from Natural Resource Management Ministerial Council to determine whether this issue is to be addressed on a national or state-by-state basis. In 2002, the Sustainable Urban Development Program—a partnership between the Urban Development Industry Association and the Queensland Government—was launched to promote best practice. This programme supports and promotes innovative practices in Queensland’s urban development industry, with 25 developments being recognised for incorporating progressive sustainable design features.

#### *Incentives for Water Sensitive Urban Design*

The Queensland Government provides incentives through a number of programs. Subsidies administered by the Department of Local Government, Planning, Sport and Recreation have been reviewed. Queensland recently finalised a review of its major subsidy schemes that provide support for water infrastructure for local governments—the statewide Local Governing Bodies’ Capital Works Subsidy Scheme and the Smaller Communities Assistance Program. Water, sewage and effluent reuse subsidies provided under the Local Governing Bodies’ Capital Works Subsidy Scheme will continue under a programme called the Water and Sewerage Program.

Subsidy arrangements under the new Water and Sewerage Program from 1 July 2006 will require that councils have an approved total management plan, which sets out the key requirements for efficient water use.

EcoBiz is an Environment Protection Agency partnership programme that helps Queensland businesses adopt resource-efficient practices, including water consumption. In 2005–06, \$0.75 million has been specifically allocated to water projects.

The Queensland Sustainable Energy Innovation Fund promotes innovation in energy efficiency and renewable energy technologies and practices. Funds are focused on innovative projects dealing with research, development, demonstration or commercialisation of energy efficiency or renewable energy. This programme has been expanded from 2005–06 to include water innovation with an emphasis on reducing the energy density of water use. A call for submissions was released in July 2005.

#### Public Consultation and Education

The Environment Protection Agency is developing an overall communications strategy for water efficiency and water recycling as part of a broader sustainability awareness campaign. Implementation will commence in September 2005 and will be aligned to the southeast Queensland regional campaign for the Water Forever Program.

#### Discussion and Assessment

The Commission notes that Queensland has a number of initiatives in place to encourage and facilitate the adoption of water sensitive urban design. There is some evidence that processes to review these approaches or evaluate existing ‘icon’ water sensitive urban developments have been initiated. The Commission considers that Queensland has made satisfactory progress towards meeting its COAG commitments in innovation and capacity building for water sensitive cities.

### 4.8 Community Partnership and Adjustment

#### Assessment Issues

The Commission will be examining Queensland’s public consultation and education arrangements for consistency with its COAG obligations, for all aspects of the COAG water reform agenda. Particular assessment items are identified under each relevant section of this assessment framework.

With regard to addressing adjustment issues, the Commission will be looking for Queensland to demonstrate its commitment to close engagement with affected parties on possible responses, including consideration of, at least, the factors outlined in paragraph 97(i) of the National Water Initiative.

Queensland has consulted publicly on a range of water reform matters. Previous sections of this assessment detail Queensland’s consultation and education initiatives in relation to water resource planning, water pricing, environmental water and urban water. In summary:

- Water resource planning in Queensland requires public notification and the establishment of Community Reference Panels under the *Water Act 2000*. Community reference panels are formed to ensure community

consultation informs the development of water resource plans, and resource operation plans. They include representatives of cultural, economic and environmental interests in the proposed plan area. Upon release of a draft water resource plan or draft resource operation plan, community meetings and information sessions are held within the planning area to communicate the content of the plan, and to receive comment. Once water resource plans are gazetted, the Department of Natural Resources and Mines prepares, and publicly releases, annual reports on the implementation progress of individual water resource plans

- The Water Reform Implementation Group is the key mechanism through which Queensland consults the peak stakeholder groups about water matters. Rural, industry, conservation, water supply and local government interests are represented on this group, which generally meets three times a year to discuss policy, regulatory and program matters
- Queensland undertakes separate consultation and education initiatives for key water policy issues. For instance, Queensland consulted publicly on its recently announced pricing regime. A discussion paper outlining water charges policy options was prepared by the Department of Natural Resources and Mines, in consultation with principal stakeholders. Once the discussion paper was released, the government continued consultation with key stakeholders and the broader irrigation community, and invited public submissions on the paper
- The Environmental Protection Agency has promoted the Water Efficiency Labelling and Standards Scheme to industry and retailers. Queensland advised the Commission that the Environmental Protection Agency will undertake additional state-based promotions on the scheme once legislation has been approved. The Environment Protection Agency is also developing an overall communications strategy for water efficiency and water recycling as part of a broader sustainability awareness campaign.

#### Adjustment issues

To date, there have been no instances of reductions in allocations in Queensland, and therefore no adjustment issues have arisen. Nevertheless, Queensland's procedure for providing compensation is detailed in Chapter 7 Part 3 of the *Water Act 2000*. An owner of a water allocation is entitled to be paid reasonable compensation when a change to a water resource plans reduces the value of the allocation, and when the change is made within ten years after the water resource plans is approved. Limitations apply to compensation such as: when compensation is payable under another Act, when compensation has already been paid, or when the Act has been breached. The compensation amount is based on the difference in market values, adjusted for factors such as benefits accruing to the allocation holder arising from the change (see s991 for full details) immediately before and after the change in the water resource plans.

#### Discussion and Assessment

Queensland has a well developed consultative process for engaging water users and stakeholders on a range of water reform matters, including development of water resource plans and resource operations plans. Queensland's public consultation processes not only inform a range of stakeholders and community members on issues relevant to water reform, but engage them in planning and policy development.

The Commission recognises that Queensland has not needed to provide adjustment assistance consequent to changes in water access entitlements to date. Nevertheless, its *Water Act 2000* does outline a process for providing compensation in such an event.

The Commission considers that Queensland has met its COAG commitment in this area.

## 4.9 National Water Quality Management Strategy

### Assessment Issues

The Commission is looking for Queensland to demonstrate continued and active implementation of the National Water Quality Management Strategy (NWQMS). In undertaking this assessment, the Commission will be guided by the expectations identified in the 2001 paper on implementation and the approach taken in previous National Competition Policy assessments. The Commission will consider the extent to which the implementation of other water reform commitments recognises and gives effect to the NWQMS. The 2005 National Competition Policy assessment will consider Queensland's implementation of guidelines that have been finalised since the last assessment. The Commission also expects that the Queensland Water Quality Guidelines are in place.

### Implementation

In 2001 Queensland agreed to a two-yearly review of its implementation of NWQMS guidelines and the 2003 National Competition Policy assessment (NCC, 2003a) examined Queensland's progress in relation to this timeframe. The 2003 National Competition Policy assessment found that Queensland was making satisfactory progress in implementing policies that reflect the NWQMS framework.

Queensland advises that it has continued to implement the NWQMS since the 2003 National Competition Policy assessment through a number of instruments, including those discussed below.

#### *Environmental Protection (Water) Policy 1997*

The Environmental Protection (Water) Policy 1997 adopts the NWQMS approach of establishing the environmental values of waterways for protection, water quality objectives to protect environmental values, and protocols for sampling, measurement, analysis and reporting.

The Queensland Environmental Protection Agency is currently working with catchment communities to establish environmental values and water quality objectives for Moreton Bay – South-East Queensland, the Mary River Basin – Great Sandy Region, and the waters of Douglas Shire (EPA, 2004). The draft environmental values and water

quality objectives for each area are publicly available on the Queensland Environment Protection Agency website ([www.epa.qld.gov.au](http://www.epa.qld.gov.au)).

Environmental values are considered in the development of water resource plans. The *Water Act 2000* obliges the Minister for the Department of Natural Resources and Mines to consider environmental values established under the Environmental Protection (Water) Policy 1997 when preparing water resource plans. However, Queensland acknowledges that catchment runoff and river water quality modelling is still an emerging science and an adequate methodology has not yet been developed to integrate this with river flow modelling. The Environmental Protection Agency will work with the Department of Natural Resources and Mines and other relevant stakeholders to advance the development of this methodology so that the next revision of water resource plans may take better account of the environmental values of waters.

The final environmental values will also be considered for scheduling under the Environmental Protection (Water) Policy 1997. The effect of scheduling is that the environmental values and water quality objectives become matters for consideration in assessing development applications under the *Integrated Planning Act 1997*.

For the remainder of Queensland's waters, the Environmental Protection Agency is working with regional natural resource management bodies and local governments to establish arrangements whereby the water quality target-setting approaches established by these bodies have been accredited by the Environmental Protection Agency, for use by other stakeholders in each catchment.

#### *The South East Queensland Regional Water Quality Management Strategy*

*The South East Queensland Regional Water Quality Management Strategy* (Healthy Waterways, 2001) was developed in cooperation with local government, community and industry groups. It adopted NWQMS principles and methods in establishing an integrated water quality plan for South East Queensland waterways with draft environmental values and water quality objectives, a water quality monitoring programme, and a framework for management action.

In recognition of the adaptive management approach, Queensland has initiated a review of the strategy, released in 2001. Queensland intends to publish a revised strategy by December 2006.

#### *Reef Water Quality Protection Plan*

The Queensland and Commonwealth Governments signed a memorandum of understanding in August 2002 on a joint approach to protecting the Great Barrier Reef from land-based pollution; with a particular focus on diffuse pollution. The *Reef Water Quality Protection Plan* aims to halt and reverse, within ten years, the decline in the quality of water entering the Reef. The plan identifies practical actions to improve water quality and reduce adverse impacts on the marine environment. Water quality targets developed in regional plans will be consistent with the approach set out in NWQMS paper no. 4.

A number of projects, totalling more than \$4.8 million, were recently announced by the Commonwealth Government to contribute towards the *Reef Water Quality Protection Plan* (Minister for the Environment and Heritage, 2005). The projects include:

- protection and restoration of river edges in the Tully River Basin, to reduce sediment and nutrients entering the Reef through actions such as planting trees and ground covers, and fencing areas for natural regeneration
- establishment of a network of trained community volunteers and scientific data collection instruments for recording benchmarks for sediment and nutrient levels at key sites in the Burdekin Catchment
- formation of a project to work with industry and landholders to evaluate best management practices such as irrigation efficiency, effective fertiliser use and protecting river edges in the Mackay Whitsunday region, and
- development of a catchment-based water quality improvement plan in the Burnett Mary region that will help prioritise actions to improve water quality by preventing high loads of nutrients and sediment entering waterways.

#### *Water Quality Monitoring*

Queensland's recent water quality monitoring activities have included the following:

- development of a conceptual framework for a stream and estuary assessment programme by the Environmental Protection Agency and Department of Natural Resource and Mines. This programme is undergoing detailed planning, with a view to pilot implementation by 2006–07. Part of this framework has been used to develop a programme that specifically addresses land-based pollutants entering the Great Barrier Reef Lagoon. Monitoring for this programme commenced in the latter half of 2005
- providing water quality science for priority regions in Queensland through the National Water Quality State Investment Program. The programme, which is jointly run by the Environmental Protection Agency and Department of Natural Resources and Mines, is providing event-based water quality monitoring, reviews of water quality condition and trends and whole of catchment modelling to support regional bodies to develop their strategic investment strategies for environmental protection. The programme is also developing tools to allow regional bodies to design effective water quality monitoring strategies and to interpret water quality data for adaptive management, and
- implementation of the sustainable rivers audit for the Murray-Darling Basin, in accordance with the Murray-Darling Basin Commission timelines. The audit recognises that biota and biological processes are the fundamental measures of river health.

Queensland makes water quality and river health data available through publications and on the websites of the Environmental Protection Agency and the Department of Natural Resources and Mines.

#### *Queensland Water Quality Guidelines*

The Environmental Protection Agency has developed the *Draft Queensland Water Quality Guidelines* (EPA Queensland, 2005) that complement the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000* (ANZECC & ARMCANZ, 2000). They are technical guidelines that aim to protect Queensland's aquatic ecosystems.



The *Draft Queensland Water Quality Guidelines* have formed a basis for the water quality objectives derived for Moreton Bay – South-East Queensland, the Mary River Basin – Great Sandy Region, and the waters of Douglas Shire, and will be a primary information source for establishing water quality levels in other areas of Queensland. The guidelines were on public exhibition in May 2005, at which time the Environmental Protection Agency sought written submissions from interested parties. Queensland intends to publish subsequent versions as significant new material becomes available.

### Discussion and Assessment

Queensland continues to implement the NWQMS framework. Developments since the 2003 National Competition Policy assessment include:

- draft environmental values and water quality objectives now exist for South East Queensland waterways, the Mary River Basin – Great Sandy Region, and the waters of Douglas Shire. In line with the key elements of the NWQMS the draft environmental values and water quality objectives were developed in consultation with the community; and are publicly available on the Department of Natural Resources and Mines website
- Queensland has initiated a review of the *South East Queensland Regional Water Quality Management Strategy*, released in 2001. Queensland intends to publish a revised strategy by December 2006, and
- Version 1 of the Queensland Water Quality Guidelines was released for public comment in May 2005.

The Commission also acknowledges that Queensland has:

- continued to review its water quality monitoring arrangements to ensure that the scope of indicators, and their spatial and temporal coverage, provides an adequate description of the condition of waterways, and
- recognised the NWQMS in its water planning processes. Water resource plans must consider environmental values established under the Environmental Protection (Water) Policy 1997.

On the basis of the previous discussion, the Commission considers that Queensland has made satisfactory progress towards meeting its COAG commitment in this area.

# WESTERN AUSTRALIA 5



## WESTERN AUSTRALIA

### 5.1 Water Access Entitlements and Planning Framework

#### 5.1.1 Water Access Entitlements

##### Assessment Issues

The Commission is seeking detailed information from Western Australia with regard to its current arrangements for the provision of water access entitlements. The Commission is looking for Western Australia to:

- have completed the conversion of water access entitlements to entitlement systems in line with the principles and timeframes of its 1994 Water Reform Framework commitment
- have made significant progress in the development of publicly accessible systems for registering water access entitlements and trades, and
- report on the public consultation and education processes in place for the introduction or review of entitlement regimes.

Furthermore, the Commission will be looking for Western Australia to:

- report on the current status of the review of the Rights in Water and Irrigation Act and steps being taken to improve water access entitlement security
- demonstrate that the review of the Act includes the consideration of the ultimate removal of the linkage of water entitlements and land title or that the restrictions are in the public interest and consistent with the COAG reform obligation, and
- that in the interim period until this separation occurs, or the effective linkage is demonstrated in the public interest, it has processes and practices in place to ensure its water licence and entitlement arrangements will not be a significant barrier to water trading.

**Western Australia's *Rights in Water and Irrigation Act 1914*, as amended, establishes a comprehensive system of water entitlements. The Department of Water administers water allocation decisions and regulates the use of water through this Act.**

**Under the *Rights in Water and Irrigation Act 1914*, there are 52 proclaimed groundwater and 22 proclaimed surface water management areas, covering the major water resources of the state.**

##### Licensing Arrangements

**Under the *Rights in Water and Irrigation Act 1914*, there are well licences, permits and licences to take water, which make up the regulatory system that is used to administer the use of water throughout Western Australia.**

**Well licences are required to construct or alter any artesian well within the state and non-artesian wells in proclaimed areas. A well licence does not give the right to take water from the well.**

**Permits allow the holder to obstruct or interfere with the bed or banks of a watercourse to which there is access by a public road or reserve, or to build or alter a dam on a proclaimed or prescribed watercourse or wetland. A permit does not on its own give the right to take any water collected by the activity authorised by the permit.**

**Licences to take water allow holders to take water in proclaimed or prescribed areas. This includes taking water from artesian wells throughout the state, or from within proclaimed groundwater and surface water areas.**

**On land that has not been proclaimed, water can be taken from a watercourse without a licence to take water, so long as the flow is not “sensibly” diminished, thereby affecting the rights of downstream users. If conflicts arise, the Department of Water can issue a direction defining the amount, purpose and way water may be taken.**

**The *Rights in Water and Irrigation Act 1914* restricts the holding of a licence to take water to a person who owns, occupies or has access to the land on which the water occurs, and then only if they demonstrate an intention to use the water. Licences to take water are tradeable and Western Australia states that some water trading is occurring, particularly in the south western areas of the state (see Section 5.2 on Water Markets and Trading). The period of time for which these licences are issued depends on the purpose the water is to be used for. The maximum period of issue is ten years. For ongoing use such as agriculture, licences are generally rolled over after reapplication from the licensee.**

Attached to every licence to take water is a water allocation. A water allocation is expressed in volumetric terms and specifies the amount of water that can be taken under the licence over a one year period. In regulated surface water systems, water allocations include a percentage reliability.

Water management plans, and the previous system of water allocation plans, set the local licensing policy and allocation limits for the local water resources of the area. New licences to take water are issued only if the total licensed use will not exceed the allocation limits for the resources in that system and meets the relevant requirements in the Act relating to licence assessments. An exception is where the Water and Rivers Commission Board has authorised an allocation over the allocation limit due to extenuating circumstances, as specified in the Department of Water's policy on overallocating resources. However, such an overallocation would still need to be consistent with the licence assessment provisions of the Act.

Licences to take water include a time limit for the water entitlement to be used before it may be recouped by the Department of Water. As licences to take water are issued upon demonstration of an intended use, if a licensee takes considerable time to start using their licence, the water can be recouped by the Department of Water. The Commission notes the provision in the *Right in Water and Irrigation Act 1914* that this restriction was to be examined specifically in the 2005 review of the Act.

#### Entitlement Conversion

Western Australia states that it will develop a new entitlement and trading system that is in line with the 1994 COAG Water Reform Framework (COAG, 1994) (see Section 5.2 on Water Markets and Trading). This will involve separating water entitlements from land title. This is to be provided through amendments to the *Rights in Water and Irrigation Act 1914* and implemented by the newly developed Department of Water.

A recommendation of the review of the use of water for irrigation purposes, or Irrigation Review (see below), is to establish a system of entitlements, allocated as a share of the resource, for a minimum of 25 years, and up to 40 years, renewable on a rolling basis.

Western Australia has yet to develop a timeframe for completion of this conversion process, however it has indicated that it would take about three years to complete the process for all licences. An implementation plan is expected to be developed by the end of 2006, outlining actions and proposed timelines for transitioning to the new entitlements system. The Western Australian Government is expected to make its decision by the end of 2006 and the relevant legislative changes to be made in 2007.

#### Entitlement Register

The *Rights in Water and Irrigation Act 1914* provides for a register of licences and entitlements. This has been developed and is maintained by the Department of Water. The register includes the ability to register third party interests, including the interests of financial institutions. It is publicly available through offices of the Department of Water. Licence information on this register is currently undergoing a data cleansing process, with a view to making it available on the internet.

#### Review of the *Rights in Water and Irrigation Act 1914*

In early 2003, Western Australia produced the *State Water Strategy* for Western Australia: *Securing Our Water Future* (Western Australia Government, 2003) for the improved management of water resources across the state. One of the major outcomes of this strategy is a review of the use of water for irrigation purposes, known as the Irrigation Review. In 2003 the Western Australian Government's Water Resources Cabinet Sub Committee approved the Terms of Reference for the Irrigation Review.

The review was undertaken by an independent steering committee, involving eight months of public consultation. Consultation activities included meetings with targeted stakeholders groups, including irrigation corporations, and providing draft documents for public comment before finalisation. Activities were linked to consultation undertaken by the Office of Water Strategy for the *State Water Strategy*.

The Irrigation Review was completed in July 2005 and made nine key recommendations. In summary, the recommendations are:

- create a new Ministry for Water Resources and a Department of Water Resources
- devise a strategic plan for water, to provide for long-term water resource management
- change the water entitlement system, in line with the 1994 COAG Water Reform Framework
- integrate land and water planning, particularly in areas suitable for future agricultural development, to provide certainty for investment
- investigate increasing self management of water resources in areas of high density irrigated agriculture through irrigation cooperatives
- invest in water use efficiency to reduce water distribution losses, particularly in the South West Irrigation Area
- implement metering of all irrigation water usage above five megalitres per year
- facilitate water trading through a new package of water entitlements and allocations, and
- introduce water resource management charges to recover management costs attributable to water users (IRSC, 2005).

In September 2005, the Western Australian Government released a public response to the report of the Irrigation Review Steering Committee (Western Australia Government, 2005). In this response, the government agreed to implement the nine key recommendations of the Irrigation Review, following further examination of the scope and ramifications of the proposed reforms.

A further outcome of the Irrigation Review was the formation of the Irrigation Implementation Committee, consisting of the Chair of the Irrigation Review, the Director of the Office of Water Strategy within the Department of Premier and Cabinet and key government representatives. This committee is responsible to the Water Resources Cabinet Sub Committee for delivery of projects under the Irrigation Reform Program, in accordance with the timetable and other requirements set out by the sub committee.

A number of inter agency project teams have been established to implement the recommendations of the Irrigation Review. In general, each team is responsible for preparing a Directions paper in relation to the principles of its key area, for dissemination in mid 2006. These papers are scheduled for finalisation later in 2006 following a public consultation process, involving the community, stakeholders and other relevant government agencies.

One of the proposed reforms from the Irrigation Review is to separate water entitlements and land title. Western Australia states that advice being prepared by the Irrigation Implementation Committee to Government will consider the appropriateness of this reform for Western Australia.

Government is also considering an amended trading regime to complement the new entitlements system (mentioned earlier) and facilitate a more effective water trading regime. Central to this will be the introduction of a water registry, increased metering of water abstraction and the provision of information to inform the market.

The Department of Water has a number of policies to ensure that trade impediments are minimised while amendments to the *Rights in Water and Irrigation Act 1914* are being considered. In particular, Western Australia advises that it has statewide policies<sup>1</sup> in place to support security of tenure and the ability to trade; Statewide Policy 6 and Statewide Policy 11.

Statewide Policy 6: Transferable (Tradeable) Water Entitlements for Western Australia, is an outcome of the public consultation accompanying the amendments to the *Water and Rivers Commission Act 1995* made in 2000. It restricts the holders of licences to take water to persons or organisations holding, or having access to, land entitlements (WRC, 2001).

<sup>1</sup> At the time of this assessment, Western Australia has 13 statewide policies in place to guide the licensing and management of its water resources. These policies have been developed and reviewed by the then Water and Rivers Commission over the years since 1999, and are now overseen by the Department of Water.

**Statewide Policy 11: Management of Unused Licensed Water Entitlements**, seeks to ensure that water entitlements are being fully utilised and any unused water entitlements are recovered, where appropriate, so that they can be allocated to other applicants for water. Policy 11 applies to all licences issued under the *Rights in Water and Irrigation Act 1914*, except those entitlements to water that have been purchased or have become unused as a result of improving efficiency measures (WRC, 2003).

#### Public Consultation and Education

Public consultation and education on Western Australia's entitlements regime and the proposed new regime has been carried out as part of the review of irrigation water use in Western Australia. As noted above, consultation for the review consisted of stakeholder meetings, and public release of reports for comment.

Western Australia states that, more generally, when developing any policy in relation to water entitlements and licensing, the Department of Water releases a draft policy for public comment to assist development of the details before finalisation.

Water Resource Management Committees have been formed as sub-committees of the Water and Rivers Commission Board to provide input into the water planning processes across the state and help inform the community on current and proposed entitlement arrangements. The committees consist of representatives from the community, major stakeholder groups and local councils. It is the responsibility of the committee members to consult with the community to both seek information to inform the government of the local issues in each area and also to provide an account of the decision making process and reasons behind provisions in the plans being developed.

Western Australia states that further consultation will be undertaken in mid 2006 on a Directions paper for Entitlements and Trading. The Directions paper will outline the principles and policy framework of the new systems expected to be introduced, and provide case studies of what this might mean to various groups of stakeholders. Beyond the Directions paper, a summary document will also be produced and a series of information sessions held across the state. Development of the paper will involve meetings with key stakeholders. The final document to the Western Australian Government will also be publicly available.

## Discussion and Assessment

The *Rights in Water and Irrigation Act 1914* provides for an entitlement regime for taking water in Western Australia. Western Australia has not, however, fully incorporated the 1994 COAG Water Reform Framework into its licensing arrangements. Currently, there remains a link between entitlements and land.

By the time of this 2005 National Competition Policy assessment, Western Australia was to have completed the conversion process of water access entitlements to a system in line with its 1994 COAG Water Reform Framework commitment. While Western Australia has made some progress in this area through the review of its *Rights in Water and Irrigation Act 1914* in 2000, it has yet to fully address this commitment.

Western Australia is investigating the development of an entitlement regime that is in line with the 1994 COAG reforms through its current review of the *Rights in Water and Irrigation Act 1914* (the Irrigation Review). No timetable for implementing any entitlement conversion has yet been established. The Commission notes that progressing water reform in line with its COAG commitments will involve the Western Australian Government undertaking the entitlement conversion process, as recommended by the Irrigation Review, without delay.

The Department of Water maintains a publicly accessible water entitlement register that includes third party interests.

Under the state's strategy *Securing Our Water Future*, a review of the use of water for irrigation was undertaken (the Irrigation Review). As required for this assessment, Western Australia has satisfactorily reported on this review, which was completed in July 2005. It produced nine key recommendations for consideration by the Western Australian Government; one of which was to change the current water entitlement system by removing the linkage of water entitlements and land title. In the interim, until the government decides on how it will implement this recommendation, statewide policies are in place, which, in Western Australia's view, seek to minimise any barriers to water trading due to water entitlement arrangements. These policies link water use to those with access to land, and ensure that water entitlements and associated water

**allocations are issued where a use is demonstrated and any allocations that remain unused are recovered. Western Australia considers that this policy reduces speculation and therefore enables more water to be readily available to trade. In the Commission's view, however, such policies still represents a barrier to trade.**

**Western Australia has reported on the public consultation and education carried out for introducing proposed new entitlement arrangements through the course of the Irrigation Review and on the further consultation to be carried out in the implementation phase for the review recommendations. The Commission considers that this consultation has been adequate and notes that further consultation would need to accompany implementation of new arrangements.**

**Overall, in light of the lack of progress towards achieving conversion of water access entitlements by 2005, the Commission considers that Western Australia has not met its COAG commitments in this area. The Commission notes, however, that entitlement conversion is currently being considered by the Western Australian Government and that previous changes to entitlement arrangements have enabled water trading to occur in Western Australia.**

### 5.1.2 Water Planning and Addressing Currently Overallocated and/or Overused Systems

#### Assessment Issues

In considering governments' arrangements for allocating water to the environment, in the light of guidance provided by the 1994 COAG Water Reform Framework, the ARMCANZ/ANZECC National Principles and the National Water Initiative, the Commission will expect the Western Australian Government to establish arrangements that:

- are based on the best available science and use strategic and applied research (principles 2 and 11)
- achieve a balance between environmental needs and human use that provides the water needed to achieve the environmental outcomes, while recognising, in systems where there are existing users, the existing rights of those users (principles 1, 4, 5, 6 and 9)
- involve monitoring and adaptive management where the

regular assessment of ecosystem health guides water management processes (principle 8), and

- involve stakeholder consultation and transparent processes that are robust, and ensure the timely provision of relevant information to all interested parties (principles 7 and 12).

The Commission is seeking detailed information from Western Australia with regard to its current water planning arrangements, including the provision of water to the environment. In particular, the Commission will be carefully scrutinising Western Australia's progress in meeting its commitments regarding the overallocated and/or stressed river and groundwater systems. The Commission will be looking for the Western Australian Government to:

- demonstrate how its water management plans (and related arrangements) address the obligations in the 1994 Water Reform Framework and take account of the ARMCANZ/ANZECC national principles, regarding the provisions of water to the environment
- if the water allocated for environmental purposes for particular river and groundwater sources is significantly different from that recommended by the best available science, demonstrate that this decision is based on a robust examination of the socio-economic evidence and taken in the context of an open and transparent community consultation process that makes explicit the tradeoffs
- demonstrate that an integrated catchment management approach has been adopted for the management of water and that planning processes and administrative arrangements reflect an integrated approach to natural resource management
- demonstrate it has substantially completed plans to address any existing overallocation for all river systems and groundwater resources in line with its 1994 Water Reform Framework commitments by 2005, and
- provide an overview of the public consultation and education processes in place and adopted for water planning and for addressing overallocated and/or stressed resources.

The Commission will also be looking for Western Australia to:

- demonstrate that it has progressed its water planning consistent with the timeframe that it provided for its 2004

NCP assessment (to substantially complete its water planning programme by the end of 2005)

- have developed water management plans that are transparent and provide supporting evidence for the decisions on allocations, including robust socio-economic evidence to explain any trade-offs accepted between environmental and consumptive uses, and
- demonstrate that it is determining environmental water requirements (including any assessments undertaken for the review of the arrangements for the Jandakot and Gngangara mounds) on the basis of the best available science.

**The *Rights in Water and Irrigation Act 1914* provides the legal basis for Western Australia's water planning, allocation and entitlement frameworks. The *Rights in Water and Irrigation Amendment Bill 1999* was passed on 25 November 1999, and builds on the management arrangements provided through the *Rights in Water and Irrigation Act 1914*.**

**Under the *Rights in Water and Irrigation Amendments Act 2000*, the Water and Rivers Commission merged with the Department of Environment. In August 2005, the new Department of Water was created from the Water and Rivers Commission for the purpose of managing Western Australia's water resources. The Department of Water officially opened on 1 January 2005. However, until the Water and Rivers Commission is officially abolished through legislation changes planned for mid 2006, the Department of Water will continue to operate as the public and administrative front of the Water and Rivers Commission.**

#### **Water Planning**

**A *State Water Strategy* for Western Australia: *Securing Our Water Future* was released in early 2003. There are five key objectives of the strategy for providing sustainable water resources, which are:**

- improving water use efficiency in all sectors
- achieving significant advances in water reuse
- fostering innovation and research
- planning and developing new sources of water in a timely manner, and
- protecting the value of Western Australia's water resources.

**The strategy outlines goals for water conservation and efficiency across a variety of sectors within the state. It explores possible avenues for water reuse and new supplies for total water cycle management, and includes key government commitments in response to these issues. Furthermore, the strategy provides a platform to develop research and education programmes to complement the strategy's objectives (Western Australia Government, 2003).**

**Existing water planning processes provide for the development of three levels of management plans within Western Australia. These processes originally resulted in water allocation plans; however, following the passing of the *Rights in Water and Irrigation Amendment Bill 1999*, the scope of the plans were enhanced to provide more specifically for the environment and to include more community involvement in the plan development process.**

**Regional Management Plans identify water resource values, including ecological and other environmental values, at a regional level, and establish how these values are to be protected. They define the likely future uses of the water resources and may give an indication of any future developments.**

**Sub-regional Management Plans identify water resource values, as with regional management plans, but at a sub-regional scale. They specify ecological water requirements and environmental water provisions, and establish how ecologically sustainable development of water resources is to be facilitated, including the quantity of water available and how it is allocated. The policy issues of allocation dealt with in these plans are required to be compatible with the statewide policy for Transferable (Tradeable) Water Entitlements (WRC, 2001).**

**Local Area Management Plans cover part of a single water source (eg. a groundwater sub-area). These plans establish how rights to water are to be allocated to meet various needs including the quantity of water that can be extracted on an ecologically sustainable basis. Allocations to specific future uses are defined and the nature and extent of the delegated authority that may be conferred on a relevant Water Resources Management Committee is specified. As with Sub-regional Management Plans, the sustainable yield of the system is defined.**



The type of plan developed for an area depends on the amount of consumptive use and water resource management issues in the area. Sub-regional and local area management plans include more detail on water availability and rules for extraction than broad regional plans. Local area management plans provide more detail for specific areas with greater demand and more complex management issues (WRC, 2000).

The Western Australian Government has committed to developing a State Water Plan to establish broad water management principles for the state until the year 2030 as an outcome of the Irrigation Review. The plan will adopt a whole of water cycle approach and, where possible, be integrated with other values such as human health, land use planning, prosperous communities, a healthy environment, regional policy and sustainable development. The State Water Plan is intended to provide the basis for the alignment of other water reform initiatives including guiding the resource management activities of the newly created Department of Water, legislative change, and the development of more detailed policies and agency procedures.

Western Australia's State Water Plan will be supported by a series of non-statutory Regional Water Plans with the same planning horizon to 2030. The planning areas will generally align with those covered by Regional Development Commissions, with variation where appropriate to manage specific water resource, stakeholder or servicing considerations. Regional Water Plans will consolidate available water information and current activities at a regional level, encompassing issues of not only allocation, but of all water related aspects (including issues of infrastructure and water quality). They will identify activities that need to be undertaken to meet the principles for strategic water management established in the State Water Plan. The first plan to be developed will be for the South West area.

### Integrated Natural Resource Management

Western Australia states that all groundwater management plans include some consideration of the impact of groundwater abstraction on surface water resources and surface water management plans take into consideration connected groundwater resources.

Regional management plans are developed to identify water resource values of a region and establish how these values are to be protected. A further purpose of these plans is to indicate how to integrate water resource planning and management with land use planning and management.

There are six natural resource management regional bodies in Western Australia, established under the National Action Plan for Salinity and Water Quality and the Natural Heritage Trust strategies, to develop and implement integrated regional plans for the delivery of these strategies. These regional bodies cover the south west of the state, as well as the Ord system on the border with the Northern Territory. There is no direct relationship between these bodies and Water Resource Management Committees, although informal interaction is maintained.

### Provisions and Entitlements for the Environment

In Western Australia, water for the environment is provided through water management plans, described above. There is no statutory provision for entitlements for the environment. Water for the environment is determined in line with the Statewide Policy 5: Environmental Water Provisions Policy for Western Australia, and is expressed in two ways: ecological water requirements and environmental water provisions.

An ecological water requirement is the water regime that is required to maintain the ecological values of water dependent ecosystems at a low level of risk. It is determined scientifically where data is available or through the application of local knowledge.

An environmental water provision is the water regime that is provided as the result of the water allocation decision making process taking into account ecological, social and economic impacts. An environmental water provision is established when the ecological water requirement cannot be met without significantly compromising identified social or economic factors. It is determined through consideration

of the ecological water requirement of a system, taking into account socio-economic benefits of water allocation strategies.

In most cases, ecological water requirements and environmental water provisions will be detailed as specific flow regimes which will vary spatially and temporally. They will not usually be described as percentages of mean annual volumes, flows or water levels.

Based on the systems that were looked at in detail for this 2005 National Competition Policy assessment (see below), the main tools used to determine environmental requirements and provisions in water management plans are modelled hydrologic information where possible, or estimates based on hydrogeological measurement and inference data.

As an interim measure before development of a water management plan, Western Australia develops allocation limits for areas considered to be approaching full allocation. An allocation limit is the maximum level of allocation as authorised by the state government (including public water supply held in reserve), that can be utilised on an annual basis. This limit allows acceptable levels of pumping stress, and seeks to protect dependent economic, social and environmental values. These limits are set by considering aquifer recharge (based on local rainfall), ecological water requirements and environmental water provisions (WRC, 2000).

Western Australia states that in identified overallocated areas, such as the superficial aquifer in the Perth metropolitan area, the allocation limits are progressively being reviewed through numerical modelling supported by hydrographic analysis and environmental impact evaluation.

In low demand areas (up to 30 per cent of estimated sustainable limit of the consumptive pool allocated), allocations are based on conservative estimates of rainfall recharge with a notional allowance for environmental water (i.e. environmental water provisions). Where demand increases (up to 70 per cent of estimated sustainable limit of consumptive pool allocated), sustainable yield estimates take into consideration preliminary ecological water requirements and environmental water provisions. Preliminary dependent social and ecological values are

also taken into consideration. As demand approaches full allocation (up to and above 100 per cent of estimated sustainable limit of consumptive pool allocated), specific ecological water requirements are calculated and social, cultural and economic studies may be carried out to determine environmental water provisions. In higher risk or higher value areas, the Environmental Protection Authority will approve environmental water provisions (eg. South West Yarragadee proposal and the Gnangara/Jandakot Mounds).

Due to the nature of its water resources, Western Australia's planning processes focus on groundwater systems. Unlike surface water, there is no suite of accepted scientific methods for assessing groundwater systems. It is inevitable that for groundwater systems, a water balance be used for managing the resource. Western Australia has employed a type of water balance by estimating factors such as the recharge, drop allowance and sustainable yield of a groundwater system to calculate the ecological water requirements and consequent environmental water provisions of systems addressed in water management plans. Monitoring is very important to track the accuracy of the original estimates used in the water balance. In Western Australia, monitoring regimes are included as a component of water management plans.

There is an increasing demand for water, particularly for groundwater in the south west of the state, and as such, Western Australia states that the Department of Water is undertaking the determination of environmental water provisions through water management planning on a priority basis to ensure that the highest demand areas are considered first. Western Australia states that the Department of Water is determining ecological water requirements for high priority systems at an 'intermediate' level of detail, and will take a precautionary approach<sup>2</sup> to the determination of allocation limits. In areas without a water management plan, the Department of Water may use its water allocation licensing procedures to deal with any new licence applications.

<sup>2</sup> Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation (Western Australia Government, 2003).

As discussed in Western Australia's statewide policy on environmental water provisions, not all water licensing areas across the state are managed under planning arrangements, and in many areas where there are plans, environmental water provisions have not been set. This situation will continue as Western Australia works through its planning program of reviewing old plans and establishing new water management plans. As a result, there are many instances where licence applications are submitted for areas with little information on ecological values that could be affected by abstraction. In this situation, allocations are issued on a precautionary basis that seeks to minimise ecological risk.

Western Australia states it is currently developing a set of high-level principles specific to water management to be used in the water planning process. These are expected to incorporate the ARMCANZ/ANZECC National Principles for Provision of Water for Ecosystems, as well as principles pertinent to Western Australia.

#### Transparent Planning and Trade-offs

Western Australia states that the Department of Water develops water management plans in accordance with sustainability concepts, in particular, taking what Western Australia terms a 'triple-bottom-line approach' by assessing equally environmental, social and economic issues. This approach is not undertaken to the same level of detail for each water management plan. However, effort is made to incorporate some assessment of environmental, social and economic issues in each plan, ranging from nominal consideration in systems with limited demand to detailed analysis where there is a strong competition for the available water.

Western Australia states that its water planning practices and the determination of environmental water provisions through trade-offs between ecological water requirements and consumptive use, is carried out differently for each plan area. The process for each water management plan is managed by the Department of Water and the level of community input to determining trade-offs varies depending on the level of development in an area, and in some cases the desire of the community to be involved (measured by surveys of interest). Significant environmental, social and economic issues are identified for an area through

community consultation. This involves presenting a range of water allocation scenarios to stakeholders together with the potential economic, social and environmental consequences of these, then collating community preferences. Any offsets or trade-offs made to the ecological water requirement of a water resource are made in response to those preferences identified. Western Australia states that this multi-criteria analysis approach is used to assist development of environmental water provisions.

Following approval within the government, draft plans are released for public comment before plan finalisation and implementation. The process for determining ecological water requirements and formulating consequent environmental water provisions for water management plan areas is outlined in the plans themselves (for example, the Esperance draft plan). The decision making processes outlined in the plans corresponds to that detailed in Western Australia's Statewide Policy Number 5 for environmental water provisions, which is a publicly available document (WRC, 2000).

Analyses of environmental, social and economic issues are currently being undertaken for the South West groundwater management plan covering the Blackwood, Busselton-Capel and Bunbury Groundwater Areas, also known as the South West Yarragadee area, incorporating the transfer of 45 gigalitres per year of groundwater from the region to Perth. This plan will be the first in Western Australia where significant trade-offs between ecological water requirements and consumptive use may be required. This is due to a strong demand to export water out of the region to provide Perth with additional urban water supplies.

#### Addressing Overallocation

Western Australia states that due to socio-economic considerations, licensed entitlements in overallocated systems will not be reduced to sustainable extraction limits unless further investigations show that the system is being over extracted. For systems where modelling has shown existing allocation limits are too high to maintain a stable water regime, analyses are currently being undertaken to understand the socio-economic impacts of entitlement reductions. Where entitlement reductions are deemed necessary, the Department of Water will work with the community to achieve a sustainable outcome.

A number of groundwater management plans are currently being developed for groundwater areas where modelling of aquifer yields has identified them as overallocated. Western Australia states that the Department of Water intends to implement water management plans in these areas (Cockburn, Murray, Rockingham plans to be completed in 2006, and Serpentine and South West Coastal plans to be completed in 2007), with community endorsed management options for achieving sustainable extraction, before reducing licensed entitlements to sustainable levels. These management options could possibly include improved water use efficiency and water conservation measures, assessment of the current and potential environmental impacts caused by abstraction using a numerical model, recouping of unused licensed entitlements under current Western Australian policy, and, as a last resort, the reduction of licensed entitlements.

#### Water Management Plans

Western Australia nominated 77 water sources for management under its 1999 implementation programme – 40 river basins and 37 groundwater management areas. Following revisions in 2002, 2004 and 2005, including amalgamation of some plan areas, Western Australia's current COAG implementation programme covers 32 planning areas - seven river basins, 24 groundwater management areas and one combined surface and groundwater system.

During plan development, the Department of Water has the ability to determine if a plan is to be statutory or non-statutory. To date, all water management plans developed under current planning arrangements, and all water allocation plans developed under previous planning arrangements, have been non-statutory. Western Australia states that the allocation limits specified in each plan have been sufficient to provide water for all uses in each area, including for the environment.

As part of the planning process, as stated in statewide policy, in areas where environmental water provisions may have significant implications for the environment, the draft plans are required to be submitted to the Environment Protection Authority, before plan finalisation, for possible environmental impact assessment. The Environment Protection Authority is able to assess the allocation limits

specified in water management plans and to set criteria that a water management plan must consider.

In 2004, Western Australia had plans in place for a quarter of these areas and indicated that it expected to complete plans for another 22 areas in 2005. The 2004 National Competition Policy assessment raised serious doubts as to whether Western Australia could meet its COAG commitments in a reasonable timeframe, in part due to the continued realignment of its planning priorities, and on the ground evidence that these priorities are, in some cases, not well founded (the stress on the Jandakot and Gnangara mounds for example) (NCC, 2004b).

Since the 2004 National Competition Policy assessment, Western Australia has finalised and implemented only the Kemerton Local Area plan and released the Draft Esperance Groundwater Area Management Plan (WRC, 2005) for public comment.

For the purposes of assessing Western Australia's approach to incorporating the 1994 COAG Water Reform Framework and the ARMCANZ/ANZECC National Principles for Provision of Water for Ecosystems into its water management arrangements, the Kemerton Local Water Management Plan and the Draft Esperance Groundwater Area Water Management Plan were looked at in detail for this 2005 National Competition Policy assessment. These systems were selected due to them having been recently developed. The Commission examined water planning for these systems based on publicly available information in order to test the transparency of Western Australia's processes and outcomes.

#### *Local Area Management Plan for the Groundwater Resources of the Kemerton Subareas*

This Local Area Management Plan was finalised in December 2005 and implemented in early 2006 and was developed primarily to manage the groundwater resources in the new Kemerton groundwater sub-areas located in the South West region of the state (DoW, 2005).

The Kemerton plan relies heavily on a scientific assessment of the Kemerton area in a second phase study carried out by Aquaterra Consultants in 2002 (Ariyaratnam and Middlemis, 2002). This study builds on a desktop study into the impacts of development in the Kemerton Industrial Park area north

of Bunbury on nearby sensitive wetlands, which was undertaken in 1999 with limited data.

There are a number of protected permanent and seasonal groundwater dependent ecosystems in the Kemerton area. The Kemerton Industrial Park is underlain by four aquifers:

- the Superficial aquifer<sup>3</sup> - recharged by rainfall and possible inflow from the Leederville aquifer and from the Harvey River Diversion Drain. Discharges from this aquifer support local swamps and wetlands. Water quality ranges between good and moderate
- Leederville aquifer - recharged by leakage from the Superficial aquifer. It discharges offshore
- Yarragardee and Cattamarra Coal Measures aquifers – both are regional aquifers, recharged from outside the plan area. While the two aquifers are connected in the south, the water quality of the Cattamarra Coal Measures aquifer is saline to very saline while the Yarragardee aquifer has good quality water.

The collection of targeted field data for assessing ecological water requirements and environmental water provisions included locating and rehabilitating existing monitoring bores in the area. An additional 17 monitoring bores were also sunk in areas where data were sparse, including in the wetlands. Analysis of data from these new bores, together with existing data and three previous studies of deeper aquifers, provided a detailed picture of water use to date. Licensed water withdrawals from the Leederville and Cattamarra Coal Measures aquifers appear to have been sustainable.

The understanding of linkages between surface water, groundwater and groundwater dependent ecosystems was improved through the second phase Kemerton study. The status and structure of a sample of protected ecosystems, investigated in the initial desktop study, were reassessed during the second phase study through field surveys. Groundwater dependent ecosystems were mapped. Acceptable drawdowns of the Superficial aquifer for the dryland and wetland vegetation were estimated using (then) recently published data; dryland estimations rely heavily on studies of a single *Banksia* species and its water dependence.

<sup>3</sup> In relation to Western Australia's groundwater terminology, a 'superficial aquifer' refers to a major shallow unconfined aquifer, such as that lying under much of the Swan Coastal Plane.

The resulting ecological water requirements were similar for both areas.

The effects of various development strategies were modelled. The existing 1998 groundwater model for the area was revised and updated according to current best practice. Surface recharge was one of the critical input parameters for the modelling; it was obtained as a percentage of rainfall. The model calibration shows a high level of agreement between the measured and predicted results, implying that the recharge data (and other input parameters) were acceptable and that the model predictions under different water abstraction scenarios are likely to be reliable. Sensitivity tests were conducted to test the variation in modelled predictions with changes in the values of the input parameters. Finally, the model was used to estimate the drawdown of the different aquifer levels under six development scenarios.

The second phase study developed a proposed water management strategy that aims to protect environmental values of the area, while providing water for planned developments.

One feature to note is that the study, in line with the requirements of the state environmental water provisions policy, investigated the potential for natural recharge to be augmented through aquifer storage and recovery. Both infiltration and injection methods were considered. The conclusion was that the only economic source of water for aquifer storage and recovery was enhanced infiltration using water sensitive urban design. This would add about one gigalitre to existing recharge of the Superficial aquifer, but may pose a pollution risk (coming from an industrial estate) to the aquifer. Although this source was included in one of the modelled scenarios, it is not clear whether it was included in the recommendations for the plan or not. The plan document does not mention aquifer storage and recovery and describes the source of water for the Superficial aquifer as being recharged by rainfall.

The Aquaterra Consultant's report includes recommendations for monitoring for predicted changes in water table level and in ecosystem response, in light of increasing water usage under the Kemerton plan. These recommendations were adopted and incorporated into water planning arrangements for the area.

*Draft Esperance Groundwater Area Water Management Plan*

The Esperance plan was released as a draft for public comment in December 2005. It was developed to manage the groundwater resources of the Esperance Groundwater Area and to ensure their sustainable use for the benefit of the local community (WRC, 2005).

The Esperance plan is a local plan encompassing the Town, Twilight and Butty superficial aquifers, and the Warden fractured rock aquifer. These make up the sub-areas of the plan. The three superficial aquifers provide urban water supplies for the township of Esperance, through the Water Corporation.

There are groundwater dependent ecosystems in the Twilight, Butty and Warden sub-areas; there are none identified in the Town sub-area. These wetlands are known to be sensitive to changes in water flow regimes, and to water table heights caused by climatic variations and groundwater pumping.

The local area draft plan for Esperance, originally prepared in 1997, has been updated by this plan due to increasing demand for water from the superficial aquifers to provide town water supply. Current extractions from the Town superficial aquifer have been identified as exceeding sustainable yields.

The main environmental issues in the region relate to deep saline water being drawn up into superficial aquifers, marine salt water intrusion, threats to groundwater dependent ecosystems (including Ramsar listed wetlands), and excessive water withdrawals.

A desktop study and groundwater drawdown simulation, undertaken in 1996, indicated that the pumping from bores for town water supplies produced negligible drawdown in two of the wetland systems. No new environmental study was undertaken in the development of the draft Esperance plan. Consequently the ecological water requirements of the groundwater dependent ecosystems were not determined. The plan does note, however, that visual observation does not show any problems from groundwater abstractions.

In relation to the scientific method employed for developing the Draft Esperance Groundwater Area Water Management Plan, there is a noted lack of ecological studies; the plan appears to be based on hydrological considerations only.

Given the environmental sensitivity of three of the sub-areas and the potential for salt water impacts, hydrological-based allocation limits have been established using conservative estimates in these sub-areas. The allocation limits were established from estimates of recharge and considerations of groundwater dependent ecosystems.

In the Twilight sub-area, the allocation limit has been set at the existing level of abstraction, which is 60 per cent of the estimated sustainable yield. In the Butty sub-area, the allocation limit has been set to 30 per cent of the estimated sustainable yield, which includes allocations for Esperance town water supply. In the Warden sub-area, the allocation limit has been set at 100 per cent of the estimated sustainable yield and also includes allocations for Esperance town water supply. In the Town sub-area, which does not contain any environmentally sensitive groundwater dependent ecosystems, the allocation limit has also been set at the sustainable yield limit, which is a considerable improvement on the existing situation where licences had been issued for about 190 per cent of the sustainable yield (actual withdrawals were considered to be considerably less).

Monitoring is an important part of the plan given the lack of scientific information on which the allocation limits are based. The Water Corporation (along with all major water abstractors) is required to report annually on its compliance and to report any detrimental changes in ecosystems. Any new licence applications that are located within one kilometre of groundwater dependent ecosystems are required to provide ecological studies supporting their applications.

The Esperance plan includes recommendations for studies to identify all groundwater dependent ecosystems and their ecological water requirements, acknowledging the lack of ecological and hydrological studies currently behind the plan. Environmental water provisions can then be set based on this scientific approach rather than on the use of generalised indicators and safety factors. However, there is no indication whether these studies will be funded or not.

*Arrowsmith, Jurien and Gingin Groundwater Areas*

These areas have been identified as overallocated groundwater areas. Interim Sub-regional Allocation Strategies were implemented in 2002 and are scheduled for

review by 2009-10. The allocation limits contained in the plans will be reviewed on the basis of hydrograph analysis, environmental impacts and socio-economic values.

#### *Cockburn Groundwater Area*

This area has been identified as an overallocated groundwater area. The original water allocation plan for this area was implemented in 1993. A revised water management plan is currently being prepared and is due to be implemented in 2006, setting new allocation limits to achieve sustainability. New aquifer yields for the superficial aquifer were derived by numerical modelling on the basis of water balance analysis. In three of the four sub-areas, the modelled aquifer yields are less than the current licensed entitlements. Allocation limits are currently being revised based on the new modelled aquifer yields. The groundwater resources will continue to be closely monitored and bore hydrographs will be analysed to determine potential impacts on identified dependent ecosystems. The implementation of the management plan will include the identification of options to be worked through with the community to achieve sustainability.

#### *Rockingham and Stakehill Groundwater Areas*

These areas have been identified as overallocated groundwater areas. A water management plan is being developed for these areas and is scheduled for completion and implementation in 2006. New allocation limits for the superficial aquifer were derived by numerical modelling on the basis of water balance analysis. In some sub-areas, the modelled aquifer yields for the superficial aquifer are less than the current licensed entitlements. Allocation limits are currently being revised based on the new modelled aquifer yields. The groundwater resources will continue to be closely monitored and bore hydrographs will be analysed to determine potential impacts on identified dependent ecosystems. The implementation of the management plan will include the identification of options to be worked through with the community to achieve sustainability.

#### *Gnangara, Swan, Perth, Mirrabooka, Gwelup, Wanneroo and Yanchep Groundwater Areas*

These areas have been identified as overallocated groundwater areas. A draft Perth to Gingin Plan is scheduled to begin development in 2006. The draft plan is anticipated for release by June 2007, to be finalised and implemented

by the end of 2007. It will incorporate options to address the overallocation situation. These options will include an increase, where possible, of water use efficiency and water conservation measures, assessment of the current and potential environmental impacts caused by abstraction using the numerical model, recouping of unused licensed entitlements under current Western Australia policy, and as a last resort, the reduction of licensed entitlements.

#### *Bunbury, Busselton-Cape and Blackwood Groundwater Areas*

These areas have been identified as overallocated groundwater areas. A draft plan covering these areas (South West Groundwater Areas Water Management Plan) is scheduled for completion by September 2006, to be finalised and implemented by 2007. Extensive modelling and detailed Environmental Water Provisions will ensure any potential overallocation situation does not manifest. Western Australia states that this plan will be the first case in Western Australia where significant trade-offs between ecological water requirements and consumptive use may be required.

#### *Collie Surface Water and Groundwater Areas*

This area has been identified as an overallocated groundwater area. A draft Collie Water Management Plan, scheduled for release by mid-2006, will take into consideration the overallocated groundwater resources of the Collie Groundwater Basin and surface water resources upstream of Wellington Dam. Preliminary Ecological Water Reserves and Environmental Water Provisions will be developed for this plan. It is expected to be finalised and implemented by 2007.

#### *Carnarvon Groundwater Area*

This area has been identified as an overallocated groundwater area. A groundwater management strategy for this area was implemented at the beginning of 2004. It contains provisions to reduce the current overallocation situation to a sustainable level within seven years. The resource is self-limiting due to water quality constraints. Western Australia contends that even though the system is about 200 per cent overallocated, actual usage has never exceeded its sustainable level due to the self-limiting water quality constraint. Western Australia contends that the plan is working well and is accepted by the community. It is scheduled for review by 2010-11.

The 2004 National Competition Policy assessment looked at the Canarvon plan in detail. For that assessment, the environmental assessment underpinning the Canarvon local plan was found to be based on an unrecognised environmental water assessment method, raising questions as to whether Western Australia has used the best available science in determining the environmental water requirements for this area. Furthermore, Western Australia did not sufficiently explain why it did not adopt the recommendations for research into water requirements for identified significant groundwater dependent ecosystems.

#### *Water Planning Schedule*

The schedule for completing water management plans for water systems within Western Australia is provided in Table 5.1 below. For plans that have not commenced yet, only those that have been included in the planning schedule provided for the purpose of this assessment on 15 March 2006 are included.

Table 5.1 – Status of water management plans in Western Australia

Management Area	Resource	Document	Status	Implementation Date
Albany local	G	Management Plan Revised Plan	Commenced	1991 2007*
Arrowsmith subregional	G	Management Plan Allocation Strategy	Implemented Implemented	1995 2002
Bolgart	G	Scheme Review	Implemented	1990
Bremer Bay	G	Protection Plan	Implemented	1995
Broome local	G	Management Plan	Implemented	1994
Canarvon local Carnarvon Artesian Basin	G	Management Strategy Management Plan	Implemented Commenced	2004 2006/07*
Cockburn subregional	G	Management Plan Revised Plan	Implemented Commenced	1993 2006*
Collie subregional	S S/G	Management Strategy Management Plan	Implemented Commenced	1988 2006/07*
Dampier Peninsula subregional	G	Management Plan	Not commenced	2007/08*
Derby local	G	Management Plan	Implemented	1992
Esperence local	G	Management Plan	Draft	2006*
Exmouth local	G	Allocation Plan	Implemented	1999
Fitzroy River subregional		Management Plan	Not commenced	2007/08*
Gascoyne	G	Management Plan	Not commenced	2007/08*
Gingin subregional	G	Management Plan Allocation Strategy	Implemented Implemented	1993 2002
Goldfields regional	G	Management Plan	Implemented	1994
Harvey Basin regional	S	Allocation Plan	Implemented	1999
Jurien subregional	G	Management Plan Allocation Strategy	Implemented Implemented	1995 2002



Management Area	Resource	Document	Status	Implementation Date
Kemerton local	G	Management Plan	Implemented	2006
La Grange subregional	G	Management Plan	Not commenced	2007/08*
Marbellup local	S	Management Plan	Not commenced	2007/08*
Murray subregional	G	Management Plan	Draft	2006*
Murray River Basin	S	Management Plan	Not commenced	2007/08*
Ord River	S	Management Plan	Draft	2006/07*
Perth-Gingin subregional (Gnangara Mound)	G	Management Plan	Commenced	2007/08*
Pilbara Coast subregional	G	Management Plan	Commenced	2006/07*
Rockingham subregional (includes Stakehill GWA)	G	Management Plan	Commenced	2006*
Rottnest Island	G	Management Review	Implemented	1987
South West GWAs subregional (Bunbury, Busselton-Capel, Blackwood GWAs)	G	Management Plan	Commenced	2006/07*
South West Coastal	G	Management Review	Implemented	1989
Southern River local	S	Management Plan	Not Commenced	2007/08*
Whicher regional	S	Management Plan	Commenced (studies)	2006/07*

<sup>^</sup> G = groundwater, S = surface water  
\* Proposed implementation dates

The *Rights in Water and Irrigation Act 1914* requires regional, sub-regional and local area management plans to include monitoring and reporting provisions to ensure that the objectives of the plans are being achieved. Monitoring arrangements have been stipulated in the more recently finalised plans, while earlier plans, such as the Arrowsmith, Gingin and Jurien plans, make reference to monitoring regimes contained within other documents. In addition, Western Australia states that the Department of Water has implemented a groundwater investigation program designed to significantly increase Western Australia's knowledge of its groundwater resources.

#### Jandakot and Gnangara Mounds

The 2004 National Competition Policy assessment raised concerns regarding the environmental water assessment within the state's water planning processes. In 2004, the National Competition Council commented that it was clear

that the best available science had not always been applied to determining environmental allocations (such as in the Jandakot and Gnangara mound areas) and that there was an apparent lack of robust socio-economic evidence to explain trade-offs made between environmental and consumptive uses.

Furthermore, despite evidence that the Jandakot and Gnangara Mounds were under stress, the then Department of Environment had delayed completing its review of the two areas. The Environment Protection Authority made recommendations to the Minister for the Environment seeking urgent action.

As such, for the purpose of this 2005 National Competition Policy assessment, Western Australia was asked to make specific reference to assessments undertaken for the Jandakot and Gnangara Mounds in relation to determining environmental requirements using the best available science.

Western Australia states that the Department of Water is conducting a review of the environmental conditions of the Jandakot and Gnangara Mounds, as well as the consumptive pool. Although this review was scheduled for completion in June 2005, it has yet to be completed. It is now expected to be completed in mid 2006.

Western Australia states that although there is private abstraction on the mounds, more significant factors are climate and interception of rainfall recharge from pine plantations and significant areas of dense native vegetation. Based on a study of the impacts of these factors on the water levels of the Gnangara Mound, Western Australia is developing a whole of government action plan for coordinated management of factors influencing water level regimes.

#### *Jandakot Mound (Perth to Mandurah Plan)*

Western Australia states that it has decided to not prepare the Perth to Mandurah Water Management Plan, which incorporates the Jandakot Mound. Instead, the groundwater areas that were to be covered by this plan (Perth, Jandakot, Cockburn, Rockingham and Serpentine groundwater areas) will be subject to their own individual plans to provide for more detailed planning.

In relation to the Jandakot Mound, ecological water requirements have been determined, in line with the Statewide Policy 5, for the sub areas that are subject to Ministerial conditions. These Ministerial conditions are the individual water level criteria set by the Environment Protection Authority on the Water Authority (now the Water Corporation) of Western Australia in 1988. The ecological water requirements have been incorporated into the draft plan for the Jandakot groundwater area.

Environmental water provisions are to be developed and the plan for the Jandakot area is due to be finalised no later than 2008.

#### *Gnangara Mound (Perth to Gingin Subregional Plan)*

Studies for determining ecological water requirements for this area have been completed as part of the review of Ministerial conditions (as noted above, individual water level criteria set by the Environment Protection Authority on the Water Authority of Western Australia in 1988). In addition, an aboriginal cultural values study has been completed.

Studies to identify social and economic values are currently underway and are expected to be completed in 2006.

The framework for the draft water management plan has been developed. Preliminary environmental water provisions are expected to be completed in 2006-07 on the basis of the studies noted above, in line with the Statewide Policy 5.

#### Public Consultation and Education

Water planning in Western Australia involves public consultation, carried out before implementation of a water management plan.

Water Resource Management Committees or Water Resource Advisory Committees are formed for different regions across the state, covering different plan areas according to need. As noted in the previous section of this chapter on entitlements, these committees include community and stakeholder representatives with the responsibility to consult with the community to both seek information to inform the government of the local issues in each area and also to provide an account of the decision making process and reasons behind provisions in the plans being developed.

Before finalisation of a water management plan, a draft plan is released for public comment.

Through the consultative process, water management plans incorporate the knowledge and values of the local community. Western Australia considers this provides community acceptance of the plan.

The Department of Water has set up two Water Resource Management Committees to assist in the management of surface water and groundwater resources and development of water management plans.

The Whicher Water Resource Management Committee has been instrumental in the Department of Water consultation and education processes regarding the Water Corporation's South West Yarragadee project to transfer 45 gigalitres annually from the southwest region to Perth. The committee will also assist in the final determination of environmental water provisions for the project.

The Gingin-Dandaragan Water Resource Management Committee assists the Department of Water in its licensing decisions and is involved in many aspects of water management north of Perth.

In addition, the Department of Water works with many advisory committees throughout Western Australia on various aspects of water management. It is proposed to set up other Water Resource Management Committees in the future in the more high demand areas of the state to advise the Department of Water in water management matters and provide a venue for community consultation and education. Western Australia states that in the future, as water resources head towards full allocation, these committees will have a stronger role to play in the re-allocation of water entitlements, and any necessary licensed entitlement reductions in overallocated resources.

### Submissions

The Western Australian Environmental Defender's Office submission included a paper on environmental water allocations in Western Australia. The paper examines the extent to which Western Australia provides for environmental water allocations both in legislation and through water management planning. The paper makes recommendations on areas for improvement, in response to the current regime being implemented, including the following issues:

- legislation should require that a water management plan, when made, contains provision for an environmental water allocation to achieve the objectives of the relevant Act
- it should be a statutory duty to develop statutory management plans for those water sources that are classed as high risk, high stress or of high conservation value
- monitoring and reporting of water resources should be improved to develop a regime of water accounting for what water is available and what is extracted.

The World Wildlife Fund – Australia raised concerns over water planning processes in Western Australia, in particular in the Ord River. The concerns include the following issues:

- very few major public water sources have formal allocations of water for the environment
- decisions on the water needs for future irrigation expansion and a hydro-electricity plant in the Ord River system appear to be being made before the environmental water provision is finalised

- the Western Australian Government has not committed sufficient resources and expertise to enable timely development of water management plans and associated environmental water provisions for priority water resources.

Western Australia has provided a response to the issues raised in submissions and this is reflected in the discussion and assessment.

### Discussion and Assessment

Western Australia states that it has endorsed the ARMCANZ/ ANZECC National Principles for Provision of Water for Ecosystems and is incorporating them into its water planning arrangements. Furthermore, it is taking steps towards fully integrating the 1994 COAG Water Reform Framework requirements.

The *Rights in Water and Irrigation Act 1914* provides for the recognition of consumptive use as potentially impacting on ecological values. The Minister for Water Resources and the Water and Rivers Commission (Department of Water) have the ability to initiate development of a water management plan for an area to manage the allocation of water. Water management plans, of regional, sub-regional or local area scale, include provisions that appear to meet the water regime necessary to sustain the ecological values of aquatic ecosystems whilst recognising the existing rights of other water users. The plans, however, are non-statutory plans. Further allocation of water for any use is on the general basis that natural ecological processes and ecological values are sustained.

Accountabilities in all aspects of management of environmental water are transparent and clearly defined. Monitoring regimes in Western Australia are specified under planning processes and like the plans themselves, appear to be inconsistently determined across plan areas. Monitoring appears to be used to inform the adequacy of environmental water and improvements in understanding of environmental water requirements. It is unclear, however, if environmental water provisions are adequate in all plans, considering the lack of ecological and hydrological studies behind some (for example, the draft Esperance plan).

### Water Planning

Current planning processes involve development of management plans on either a regional, sub-regional or local area level. The scope of these plans has been broadened since 2000 to provide entitlements for the environment and to include input from the community.

Under its *State Water Strategy: Securing Our Water Future*, Western Australia has committed to undertake improvements to its arrangements for managing water resources sustainably. This includes developing a State Water Plan to provide statewide management principles through to the year 2030, in line with the outcomes of the Irrigation Review. The principles of this plan will be implemented through regional water plans, focussing on the South West region of the state initially.

The Commission considers that Western Australia has demonstrated some progress towards improving its water resource planning arrangements.

### Integrated Natural Resource Management

Water management plans are for the most part developed for one water source (eg just groundwater), however, consideration is given to other water sources during plan development.

In Western Australia, regional management plans are developed to integrate the management of all natural resources, whilst protecting the water resource values of an area.

Furthermore, six regions of the state, covering the areas of greatest water resource development, have regional bodies set up under national resource management strategies for integrated management of resources in those areas.

The Commission considers that Western Australia is adopting an integrated catchment management approach for the management of water resources.

### Provisions and Entitlements for the Environment

At a high level, Western Australia has demonstrated a comprehensive policy framework for determining water requirements of the environment and providing a water regime for the environment through the *Statewide Policy 5: Environmental Water Provisions Policy for Western Australia*.

Water for the environment is specified through ecological water requirements and environmental water provisions. Through water management plans, environmental water provisions provide a flow regime aimed at protecting in situ values and maintaining environmental systems.

The determination of ecological water requirements is based on existing information which, although of good quality and quantity in many of the highly developed areas, may not be as adequate in other less developed areas. Although it could be argued that in-depth scientific assessments would be a waste of resources in many areas that have very little water resource development, the way in which Western Australia prioritises its water systems for improving information about those systems is a concern to the Commission.

Some areas with licences do not have a plan in place. Some areas with a water allocation plan developed under old planning arrangements do not have environmental water provisions. Licences are issued on a precautionary basis in these areas.

Furthermore, Western Australia has interim arrangements for managing water allocation in systems that are considered to be approaching full allocation but which do not have environmental water provisions. This is through applying allocation limits. Existing allocation limits in overallocated systems yet to have a water management plan in place are being reviewed using hydrologic modelling.

The Commission is satisfied that Western Australia has a policy framework in place for providing water for the environment. In addition, the Commission is satisfied that in some systems where it does determine environmental water requirements, Western Australia does provide the environmental water regime determined. The Commission is concerned, however, that the science/assessments used to determine environmental water requirements varies significantly across systems, and that there is inadequate justification for this variation, for example, based on the risk or values associated with different systems. Furthermore, there is no transparent framework to guide the level of information sought for different water systems in order to provide an adequate assessment of environmental water needs.

### Transparent Planning and Trade-offs

Water management plans are developed based on Western Australia's triple-bottom-line approach (incorporating environmental, social and economic considerations) that is undertaken to different levels of detail for plan areas across the state, based on the level of development. Further to this, multi-criteria assessments are carried out to inform any trade-offs made when developing environmental water provisions. This approach involves considerable stakeholder consultation.

Draft plans are released for public comment before finalisation. The planning process and the process for developing ecological water requirements and consequent environmental water provisions is described in the plan itself. These processes are in line with Statewide Policy 5: Environmental Water Provisions Policy for Western Australia. Furthermore, under this policy, community involvement in developing water management plans is required.

Western Australia states that under the planning of the Department of Water (or previously the Water and Rivers Commission), no major trade-offs have been made to date, but will be likely in the South West groundwater management plan. Any trade-offs between the environment and consumptive use in this area will involve community consultation.

As such, the Commission considers that the processes for determining water provisions for the environment and any trade-offs that are made between ecological water requirements and consumptive use appear to be transparent.

### Addressing Overallocation

Through its review of allocation limits carried out using hydrologic modelling, Western Australia has identified a number of systems that are overallocated. These areas do not have a water management plan in place, but are managed under the interim measures of allocation limits. Western Australia is conducting analyses of the socio-economic impacts of entitlement reduction. To address overallocation, Western Australia has a schedule for developing and implementing water management plans for these systems over the next few years, and states that it intends to look into options for improved water use

efficiency through management arrangements under water management plans before any reduction in entitlements is considered.

The Commission is concerned about the time being taken to address overallocation in Western Australia. This issue is considered in conjunction with the progress of all water management planning in the following sub-section.

### Water Management Plans

Western Australia's current implementation programme for water planning activities, following amendments to its 1999 implementation programme, covers 32 planning areas. Of these 32 plan areas, 17 of these currently operate under planned management arrangements. According to the schedule provided for this assessment on 14 March 2006, Western Australia will finalise and implement water management plans for all systems currently identified, by the end of 2008.

Western Australia has provided little comfort that it is able to deliver on its implementation programme and schedule, considering the number of revisions that have been made to the first implementation programme agreed to in 1999. This relates both to changes in plan areas and not meeting agreed timeframes.

Since the 2004 National Competition Policy assessment, Western Australia has finalised one plan, which is currently being implemented.

Western Australia has identified a number of systems that are overallocated and has scheduled the development of water management plans for these areas. The timelines for these plans mean that the overallocation will not be addressed for a number of years. The Commission is concerned that following a review of allocation limits in these areas, overallocation is not addressed until new management arrangements have been developed and implemented through a finalised water management plan. Furthermore, it appears that there are a large number of options for addressing overallocation which need to be explored (with a reduction in licensed allocations only considered as a final option) before overallocation is addressed.

The Commission is concerned that Western Australia is taking considerable time to address overallocated systems. The slow progress of planning in Western Australia to date provides little confidence that Western Australia will make progress towards its commitment of substantially addressing overallocated systems in a timely manner.

The Commission fully agrees that not all plans have to be completed to the same level of detail (reflecting the different risks and values associated with different water systems). Nevertheless, the Commission is concerned about the progress being made on water planning is compounded by the fact that Western Australia has not yet demonstrated a consistent and coherent approach to water planning. Some plans are implemented, others not; no plan is statutory; plan boundaries shift and new plans developed which may overlap with existing plans. The reasons for these variations in approach are not always clear.

Western Australia has not demonstrated that it has substantially completed plans to address any existing overallocation for all river and groundwater systems in line with its 1994 water reform commitments by 2005. Western Australia has in some instances reviewed its interim arrangements and found the allocation limits to be inadequate to address overallocation. However, it is unclear how quickly these gaps will be addressed prior to completion and implementation of a water management plan.

In reviewing Western Australia's approach to water management and determination of environmental flow arrangements, the Kemerton and Esperance groundwater areas were considered as models for current activities across the state. The Commission examined water planning for these systems based on publicly available information in order to test the transparency of Western Australia's processes and outcomes.

*Kemerton Local Area Groundwater Management Plan*

Acceptable drawdowns of the Superficial aquifer for the dryland vegetation were estimated using (then) recently published data; the results being heavily dependent on studies of a single *Banksia* species and its water dependence. Although this is a weakness in the methodology for other dryland vegetation, these results still constitute the best available scientific information.

The acceptable wetland drawdowns were based on studies of a wider range of species than for dryland areas, the resulting ecological water requirements were similar to those for the dryland areas.

The effects of various development strategies were modelled. The existing 1998 groundwater model for the area was revised and updated according to best current practice. Compared with the previous version, the revised model has a finer spatial resolution in keeping with requirements for the plan, is better calibrated, has a better representation of drainage and evapo-transpiration, and an improved surface drainage and pumping component. Surface recharge is one of the critical input parameters for the modelling; it was obtained as a percentage of rainfall, a common but not field based method. However, the model calibration shows a high level of agreement between the measured and predicted results, implying that the recharge data (and other input parameters) were acceptable and that the model predictions under different water abstraction scenarios are likely to be reliable.

Sensitivity tests were conducted with the model to test the variation in the predictions with changes in the values of the input parameters. This is an important but often neglected aspect of model application.

For the Kemerton plan overall, there is a strong scientific basis for the plan which utilises best available science in the data used, the modelling methodology and the interpretation of results. The method used to develop the ecological water requirements and the environmental water provisions is transparent to lay people. The monitoring program, assuming it is implemented and overseen on an ongoing basis by a state agency, could be expected to provide early warning of problems that have not been foreseen in the plan.

*Esperance Groundwater Area Water Management Plan*

The procedure used to develop this plan is well explained (in the Plan) and is quite transparent.

This plan has been drawn up using some limited information from older studies and without assessments of actual ecological water requirements. Consequently, it uses some simple hydrological rules-of-thumb to set allocation limits that are conservative in two of the three sub-areas with groundwater dependent ecosystems. The claim of

conservative allocation limit in the Warden sub-area does not appear to be consistent with the facts.

In the Town sub-area there has been a marked improvement in the allocation limits compared to previous licensing, although this has been partly achieved by reallocating Water Corporation town water supply licences to two of the under-utilised sub-areas (Butty and Twilight). Nevertheless, the new allocation limit in the Town sub-area is still set at the sustainable yield and so this sub-area remains fully allocated. There are no groundwater dependent ecosystems known in this sub-area.

The plan calls for ecological studies to be carried out to provide ecological water requirements and hence establish environmental water provisions that are scientifically based, with the Town and Twilight sub-areas receiving priority. However, it is not clear how or when these studies will be funded. However, ecological studies are required for any new licence applications close to groundwater dependent ecosystems or that are above 50 gigalitres per year to provide some level of insurance against adverse effects.

In the Twilight sub-area, the allocation limit has been limited to the existing level of abstraction, which is 60 per cent of the estimated sustainable yield. In the Butty sub-area, the allocation limit has been set to 30 per cent of the estimated sustainable yield, which includes allocations for Esperance town water supply. In the Warden sub-area, the allocation limit has been set at the estimated sustainable yield and also includes allocations for Esperance town water supply. This latter allocation limit does not appear to be consistent with the claim of setting allocation limits conservatively. In the Town sub-area, which does not contain any environmentally sensitive groundwater dependent ecosystems, the allocation limit has also been set at the sustainable yield limit. This allocation limit is a considerable improvement on the existing situation where licences had been issued for about 190 per cent of the sustainable yield (actual withdrawals were considerably less).

Overall, the Kemerton and Esperance plans differ significantly in their use of scientific information - the Kemerton plan is clearly based on a specially organised, thorough and credible scientific study including ecological field investigations; the Esperance plan used only existing information accepting the limited amount of ecological

information. Consequently the Esperance Plan is based on rule-of-thumb hydrology with acceptable (although not generous) safety margins (in one sub-area this safety margin does not appear to be large).

#### Jandakot and Gnangara Mounds

Western Australia has reported on its progress for assessing the Jandakot and Gnangara Mounds. Provisions for the environment in these systems are being determined in line with the Western Australian Statewide Policy Number 5 for environmental water provisions. Importantly, Western Australia has undertaken a number of assessments to inform the development of environmental water provisions for both the Jandakot and Gnangara Mound areas. On the basis of this information, the Commission considers that Western Australia is making significant effort to determine environmental water requirements for these systems based on best available science.

#### Public Consultation and Education

Several regional water allocation consultative committees have been formed across the state to oversee community consultation and education on water resource management issues. These committees cover all areas identified for water management, most importantly for the consultation and identification of issues in relation to trade-offs when determining environmental water provisions.

In addition, two water resource management committees have been formed to assist with the water resource planning processes for the areas north and south of Perth.

The Commission considers that Western Australia undertakes adequate public consultation for the development of the environmental water provisions and other management provisions through the water planning process.

#### Summary

The information provided by Western Australia in its report for this 2005 National Competition Policy assessment, and through supplementary discussions with Commission staff has provided some confidence that Western Australia is making progress – especially over the past year or so – with respect to water planning.

While the Commission is concerned that the identified overallocated systems will not be addressed in a timely manner, the Commission notes the increased importance provided to water planning recently, as demonstrated through the efforts underpinning planning for the Gngangara and Yarragadee Mounds, the Irrigation Review, and the formation of the Department of Water. The Commission also fully acknowledges the greater difficulties inherent in understanding planning for, and managing groundwater resources.

Nevertheless, as noted throughout this section, the Commission's review of Western Australia's progress has highlighted some significant concerns.

Western Australia has not substantially completed the water planning programme as agreed in 1999 and updated for the 2004 National Competition Policy assessment. Nor has Western Australia substantially completed plans to address any existing overallocation for all river systems and groundwater resources. Both of these commitments were to be fulfilled by the end of 2005. Only one water management plan has been finalised since the 2004 National Competition Policy assessment.

The Commission is concerned with the pace of addressing overallocated systems in Western Australia. Systems with high consumptive water demand have identified allocation limits referred to as interim arrangements until a water management plan is finalised. Where use approaches this limit the system is prioritised for management planning. This prioritisation however, does not immediately trigger any specific requirements such as commencement of water management planning development or modification of possibly inappropriate allocation limits.

The Commission considers that Western Australia has not demonstrated a clear, consistent framework and methodology for developing water management plans. Nor, in the Commission's view, has Western Australia yet demonstrated a consistent decision making process for determining the level of planning required in different water systems across the state. Sensibly, Western Australia prioritises its water systems for planning on the basis of competition for water and the level of allocation of the water resource. Nonetheless it is unclear how variations in the information required, consultation, and other aspects of plan

development are prioritised for different water systems. As a result of Western Australia's varying application of water planning arrangements, it is therefore unclear if the ARMCANZ/ANZECC National Principles for Provision of Water for Ecosystems are being fully applied in practice.

On the basis that Western Australia has not met its COAG commitments in this area for substantially completing plans, including those for overallocated systems, by the end of 2005, and on the basis that Western Australia has not yet demonstrated a clear framework for water management planning for its water systems in line with its COAG commitments, the Commission recommends a suspended penalty of five per cent of Western Australia's 2005-06 competition payments.

The Commission further recommends that this suspended penalty be able to be recouped by Western Australia if it can demonstrate to the Commission's satisfaction by June 2007 that it has made significant progress in improving its water planning processes and practices, in particular for overallocated systems, in line with COAG commitments and with the recommendations of the Irrigation Review.

## 5.2 Water Markets and Trading

### Assessment Issues

For the 2005 NCP assessment the Commission will be looking for Western Australia to:

- have made progress toward removing restrictions to intra- and interstate trade, including making the necessary changes to its water access entitlement frameworks (the specification of water access entitlements separate from land title and fully tradeable)
- where restrictions still exist, have identified the physical, social or ecological reasons for the restrictions and have provided a robust public benefit case for restrictions that are not aimed at protecting the environment or ensuring the practical management of trading
- demonstrate a process is in place to ensure that trading rules in water plans facilitate trading where systems are physically shared or hydrological connections and water supply considerations permit trading, and
- have substantially completed trading arrangements for all



river systems and groundwater resources identified in its 1999 implementation programme.

#### *Specific NCP assessment matters*

In addition to the overarching matters outlined above, Western Australia should report on the following specific matters identified in previous NCP assessments.

To meet its COAG water trading obligations, Western Australia needs to remove the existing constraints on water trading or demonstrate that they are in the public interest. It also needs to ensure that trading rules in water management plans facilitate trading where this is physically, socially and environmentally sustainable.

The 2004 NCP assessment found that several measures in the Rights in Water and Irrigation Act and the state-wide trading policy may constrain the intrastate trade in water entitlements. To address this, Western Australia will need to:

- remove the provisions for making local by-laws to prohibit trade, or clarify that such by-laws would be used only in response to the environmental or physical constraints of the water source
- remove the restriction on who can hold a water licence, so there is no longer any link to land or the capacity to use water, and
- remove the power of the Department of Environment to reclaim unused water entitlements in areas where entitlement and trading arrangements have been fully established.

The Commission notes that a review of the Rights in Water and Irrigation Act is required in 2005 and that Western Australia proposed a review of the effectiveness of the state-wide trading policy. These reviews provide an opportunity for Western Australia to address these constraints.

For the 2005 NCP assessment, the Commission will be looking for Western Australia to have removed these remaining constraints to water trading.

**Recent amendments to the *Rights in Water and Irrigation Act 1914* established provisions for water trading in Western Australia. In addition, in 2001, Statewide Policy No. 6 – Transferable (Tradeable) Water Entitlements in Western Australia was released to provide state wide rules to**

**facilitate trading within water systems. Additionally, local trading rules are incorporated into water management plans that are specific to the locality. Western Australia has stated that it does not have many hydraulically connected surface water/groundwater systems, where potential exists for double allocation and trading between the water resources. Although licences to take and use water (granted under the *Rights in Water and Irrigation Act 1914*) are tradeable and registrable, water trading in Western Australia is currently limited primarily to those areas where full allocation of the resource has been reached.**

In July 2005, a review of irrigation water use in Western Australia was completed (the Irrigation Review). As part of the government's response, the Irrigation Implementation Committee was formed which, assisted by a number of inter agency project teams, is responsible for implementing the recommendations of the Irrigation Review. Relevant to water markets and trading, two of the Irrigation Review recommendations are to "change the water entitlement system" and to "facilitate water trading." The timetable for these reforms consists of the initial dissemination of a principles paper (April 2006) followed by a consultation period. The Irrigation Implementation Committee is expected to deliver its advice to the government in regard to the water markets and trading reforms proposed in the Irrigation Review Steering Committee report, later in 2006.

#### *Intrastate Trade*

**The Act permits a licence holder to transfer all or part of their water entitlements to another party that is entitled to own a licence. The Department of Water is required to approve all water trading in Western Australia, whether on a permanent or temporary basis. Under the Act and Statewide Policy No. 6:**

- **trades must be consistent with an approved water management plan or, if there is no plan, with the department's policy or guidelines**
- **the department may refuse trades to:**
  - **protect the environment and other users from damage**
  - **ensure outcomes continue to be beneficial to the state**

#### ■ prevent non-efficient uses and monopolies in water

- meet policy objectives
  - encourage or preserve complementarities and diversity (in the market), or
  - preserve the trading market from distortion
- the department actively discourages speculation in the market, and
  - a decision by the Department of Water not to approve a trade is subject to appeal to a tribunal.

Water trading is available in all water resources but is primarily taken up in fully allocated areas, where demand for trading is higher. Around one third of the state's water resource systems (equating to about 15 per cent of allocated water) are at a highly or fully allocated level which has led to a limited amount of water trading, particularly in the surface waters of the South West Irrigation Scheme. Some trades in groundwater entitlements have occurred in the Perth region and south west of Western Australia.

Western Australia is of the view that there are currently no legislative barriers that restrict trading between users, regions and/or sectors. Western Australia points to the Harvey Water trade – achieved through efficiency gains from piping open irrigation channels – to Perth metropolitan water supply, as an example of inter-sectoral and inter-regional trade.

About 250 trades/transfers per annum occur in Western Australia. Further reason for the low number of trades is that 80 per cent of the state's water resources are groundwater and development of appropriate trading rules in such situations is complex.

#### Interstate Trade

Interstate trade between Western Australia and the Northern Territory will be possible only if Western Australia proceeds with the second stage of the Ord Irrigation Project. In the 2001 National Competition Policy assessment, the National Competition Council noted that the Northern Territory had agreed in principle for Western Australia's water trading arrangements to apply throughout the Northern Territory's sector of stage two of the Ord project.

#### Specific Assessment Matters

In addition to the general assessment matters above, the Commission is looking for Western Australia to have addressed the following particular constraints to water trading:

- remove the provisions for making local by-laws to prohibit trade, or clarify that such by-laws would be used only in response to the environmental or physical constraints of the water source
- remove the restriction on who can hold a water licence, so there is no longer any link to land or the capacity to use water, and
- remove the power of the Department of Water to reclaim unused water entitlements in areas where entitlement and trading arrangements have been fully established.

In response to each of these issues, Western Australia has stated as follows:

- there are no by-laws drafted at this time and therefore there are no implications for trading or water markets. The Department of Water is of the opinion that by-laws would only be introduced in response to social or environmental impact grounds
- the government generally encourages an open and effective water trading market to achieve a sustainable balance in water resource management and is actively exploring mechanisms to increase the efficiency of water trading markets that recognise local conditions and takes account of the concerns of water users. To achieve this, a review of the current management framework is being undertaken as part of the government's response to the Irrigation Review. The development of a new water trading framework and the separation of water and land entitlements are probable outcomes. The work program includes the development of directions in line with the government's response and extensive public consultation on these directions during 2006. Any changes to statutory frameworks are to be implemented in 2007, and
- The Department of Water has developed a policy (Statewide Policy No. 11) to manage unused water entitlements. The policy applies to all licences granted under the *Rights in Water and Irrigation Act 1914*, except water entitlements that have been purchased

(traded), or unused water entitlements that are a result of investment in water use efficiency. The policy seeks to address community concern that licensees may be granted access to large volumes of water without having the intention of using their water entitlements within a reasonable timeframe. The policy is due to be reviewed in light of the government's response to the Irrigation Review and the possibility of separating water from land entitlements.

### Discussion and Assessment

For this assessment, the Commission is broadly looking for Western Australia to have made progress in removing restrictions to trade (both intra- and inter-state). This process must necessarily include amending its water access entitlement framework to separate tradeable water access entitlements from land titles. Where restrictions remain, Western Australia is expected to have identified the reasons (physical, social or ecological) for the continuing restrictions. In the event that these reasons are not based upon third party or environmental concerns, then a robust public benefit case will be required.

The Commission is concerned at the level of government intervention in the market through the approval/disapproval or otherwise of trade on the basis of other than environmental or third party concerns. The Commission considers that the commitment to develop a fully functioning market in water is hindered to the extent that trades can be disapproved on the basis of concerns about speculation and perceived non efficient uses.

Furthermore, where systems are physically shared, or hydrological connections and water supply considerations actually permit trading, Western Australia is expected to demonstrate that trading is in fact possible through trading rules contained in the relevant water plans. Specifically, the Commission expects that trading arrangements will have been substantially completed for all river systems and groundwater resources that were identified in Western Australia's 1999 implementation programme.

The response to the Irrigation Review report of July 2005 is currently investigating the state's trading and entitlements system. However, the Commission is concerned that a response which does not separate water from land would be inconsistent with the requirements of Western Australia's COAG commitments.

The Commission notes that the Irrigation Review report recommended that:

- trade restrictions be removed
- land and water titles be separated
- entitlements be enhanced, and
- an efficient market mechanism to facilitate the trade of water be developed.

If these recommendations were to be adopted – depending on the specifics - Western Australia's water management framework would likely be consistent with its COAG commitments. The Commission notes that the advice on implementation of these recommendations is only to be delivered to government in late 2006.

The Commission notes that some trade has been occurring in Western Australia and the government's view that there are no legislative barriers to restrict trade between users, regions and /or sectors.

Nevertheless, given the continuation of existing entitlement and trading arrangements pending a final decision by the government on implementation of the Irrigation Review recommendations, and in light of the fact that Western Australia is not yet able to demonstrate that implementation will be consistent with its COAG commitments, the Commission considers that Western Australia has not met its COAG commitments overall in this area.

In a sequencing sense, however, the Commission recognises the priority for Western Australia to complete adequate water plans and to convert entitlements as important factors in developing fully functioning water markets in the state.

The specific issues identified in the Assessment Framework are being addressed as part of the response to the Irrigation Review.

## 5.3 Best Practice Water Pricing and Institutional Arrangements

### 5.3.1 Water Storage and Delivery Pricing

#### 5.3.1a Metropolitan

##### Assessment Issues

##### *Full cost recovery*

Western Australia is required to demonstrate that there has been substantial movement towards upper bound pricing for all metropolitan water and wastewater businesses. For those businesses that are not pricing close to the upper bound of cost recovery, Western Australia should demonstrate price paths are in place that will move them towards the upper bound of cost recovery.

##### *Dividends*

Western Australia is required to demonstrate that the Water Corporation's dividend payments are continuing to align with the commercial reality requirement and that the government has established a dividend policy for the Corporation to ensure that future dividend payments continue to meet COAG requirements and are transparently reported.

##### *Cross-subsidies and Community Service Obligations*

Western Australia is required to:

- identify and report remaining cross-subsidies including any cross-subsidisation in relation to major trade waste dischargers and commercial consumers of water services;
- identify and report arrangements to remove cross-subsidies; and
- report on any Community Service Obligations and demonstrate that these are being transparently reported.

**As the monopoly water and wastewater service provider, the Water Corporation supplies in excess of 85 per cent of the Perth metropolitan water and wastewater. The Water Corporation is the only water and wastewater provider in Perth<sup>4</sup>.**

##### Full Cost Recovery

The Water Corporation's costs of storing and delivering water to the Perth area are recovered through prices as set by the Western Australian Government. The Water Corporation receives revenue sufficient to:

- recover its annual operating costs
- recover its initial cost of capital invested
- provide for the replacement of capital items, and
- receive an appropriate rate of return on capital invested.

The charges set by the Water Corporation (and for the other two non-metropolitan water providers AQWEST and Busselton Water) are reviewed by the Economic Regulation Authority. The most recent (and first) inquiry started on 15 June 2004. The report: *Inquiry on Urban Water and Wastewater Pricing*, presents recommendations on the level and structure of water and wastewater charges for the Western Australian Government to adopt in setting prices for the Water Corporation (ERA, 2005).

The charges recommended by the Economic Regulation Authority are set to recover the costs of efficient operation and maintenance, depreciation of assets and a rate of return to the asset. The recommendations of the Economic Regulation Authority are supported by the Water Corporation and are consistent with the principles currently adopted for urban pricing.

In response to the final report, the Western Australian Government has established an interdepartmental working group to consider the Economic Regulation Authority's recommendations with a view to incorporating those deemed appropriate into the 2006-07 budget.

##### *Wastewater Services*

For metropolitan customers, wastewater charges are based on the gross rental value, with individual rates set for each town based on the cost of supply. Annual increases in individual rates are capped at ten per cent plus the general price increase. In addition, there is a cap on the total rate for each town. These caps result in some towns not recovering the total cost of supply of wastewater services.

<sup>4</sup> The Water Corporation also provides bulk water to rural irrigation schemes.

### Dividends

The Water Corporation pays an 85 per cent dividend from after tax profits to the Western Australian Department of Treasury and Finance. In 2005-06, the dividend payment to Western Australia was \$321.6 million (Western Australia Government, 2005).

Information provided in the Economic Regulation Authority's *Inquiry on Country Water and Wastewater Pricing in Western Australia* notes that the total dividend payments and tax equivalent payments are greater than the community service obligations the Water Corporation receives from the Western Australia Government.

### Cross Subsidies and Community Service Obligations

As Perth is the only metropolitan area, cross subsidisation of services within Perth are not considered to be a significant issue.

Concessions are available in Perth for pensioners and seniors. The Water Corporation receives a community service obligation to fund these concessions. This community service obligation is reported in the Water Corporation's *Annual Report* (Water Corporation, 2005), and in Western Australia Budget Papers. In 2005-06 the total community service obligation for pensioner and senior discounts was \$74.9 million, however, this payment is not disaggregated into the proportion paid for metropolitan or regional concessions (Western Australia Government, 2005). Community service obligations are also provided to the Water Corporation to provide for the difference between the actual revenue received and that which would be obtained through upper bound cost recovery. No price path was demonstrated to increase water charges in the metropolitan area, or to decrease the community service obligation provided.

## Discussion and Assessment

### Full Cost Recovery

At present, the recovery of Western Australia's metropolitan water and wastewater costs is approaching the upper bound.

An inquiry into urban water charges undertaken by the Economic Regulation Authority recommended charges to

recover the costs of efficient operating and maintenance, depreciation of assets and a rate of return to the asset. These recommendations are supported by the Water Corporation and are consistent with the principles already adopted for metropolitan pricing.

However, it remains uncertain as to how the increased costs of the Kwinana desalination plant will be recovered through metropolitan water prices, as the Western Australian Government has yet to make a decision on the future metropolitan water charges to apply from July 2006. In addition, it is unclear as to the extent to which the recommendations of the Economic Regulation Authority will be accepted.

On the basis of this information, the Commission considers that Western Australia has made significant progress toward achieving full cost recovery for metropolitan water service providers. The Commission notes, however, that the Western Australian Government's response to the recommendations of the Economic Regulation Authority, including on cost recovery for the Kwinana desalination plant will be important to ensuring Western Australia's ongoing compliance with its COAG commitments in this area.

### Dividends

The Water Corporation pays approximately 85 per cent of after tax profits (excluding developer's take over assets) to the Western Australian Treasury as a dividend payment. These payments are reported in the Water Corporation's *Annual Report*.

On the basis of this information, the Commission considers that Western Australia has met its COAG commitment to demonstrate that the Water Corporation's dividend payments comply with COAG requirements and are transparently reported.

### Community Service Obligations

The Western Australian Treasury provides a community service obligation to the Water Corporation for concessions provided to pensioners and seniors. The payment is publicly reported in the Water Corporation's *Annual Report*, and the Western Australian Budget Papers. However, the payment is not disaggregated into the proportion payable to the Water Corporation for its metropolitan versus regional services.

**On the basis of this information, the Commission considers that Western Australia has made some progress to achieve its COAG commitment to report on community service obligations and demonstrate that they are publicly reported. The Commission considers that a greater level of disaggregation would further enhance transparency.**

### 5.3.1b Rural and Regional

#### Assessment Issues

Western Australia is required to demonstrate for rural and regional systems that:

- they have achieved at least the lower bound of cost recovery and are moving towards the upper bound; or
- they have established a price path to achieve at least the lower bound of cost recovery with transitional Community Service Obligations made transparent; or
- for schemes where the lower bound of cost recovery is unlikely to be achieved in the long term, that they have made the Community Service Obligation required to support the scheme transparent; and
- they have made cross subsidies transparent.

In particular, Western Australia is asked to demonstrate that it is fully disclosing Community Service Obligations, and to show that it has improved the transparency of its Community Service Obligation payments by separately identifying the Community Service Obligation for each irrigation scheme and publicly reporting the separate Community Service Obligations.

#### *Rural systems – Cost recovery and consumption based pricing*

Western Australia is required to:

- demonstrate that it has met the COAG requirement of achieving at least the lower bound of cost recovery for government-owned irrigation districts.

In addition, Western Australia is asked to report on the Water Corporation's implementation of consumption based pricing for its bulk water supply service, and demonstrate that consumption based charges are set on the basis of efficient resource pricing.

#### *Regional water and wastewater businesses – Cost recovery and consumption based pricing*

Western Australia is required to:

- demonstrate that it has implemented Economic Regulation Authority recommendations, consistent with its COAG water reform obligations; and
- regional water and wastewater businesses will have price paths established by 2006-07 to achieve full cost recovery.

#### Rural Water

##### *Cost Recovery - Bulk Water*

**In line with COAG requirements for the devolution of irrigation scheme management, the Western Australian Government, through the Water Corporation, has transferred each of its irrigation schemes to local growers' cooperatives.**

**The Water Corporation, however, still remains the supplier of bulk water to each of the grower's cooperatives.**

**The Water Corporation has rural bulk water supply agreements in place for:**

- **South West Irrigation Management Cooperative (trading as Harvey Water) (commenced 1996-97)**
- **Preston Valley Irrigation Cooperative (commenced 1998-99)**
- **Ord Irrigation Cooperative (commenced 2002-03), and**
- **Gascoyne (Carnarvon) Water Cooperative (commenced 2003-04).**

**Under the above supply agreements, the irrigation cooperatives pay a bulk water charge based on a renewals annuity charge, plus ongoing operation and maintenance costs. This would indicate that cost recovery by the Water Corporation of bulk water supply is below lower bound.**

**A review of bulk water prices is to be undertaken by the Economic Regulation Authority in the near future.**

##### *Cost Recovery - Irrigation Schemes*

**Commercial rural water users pay a fixed charge and a usage charge for water. Rural schemes are currently grouped into five classes, where those schemes for which the cost of supply is higher, incur higher water usage charges.**

An inquiry into country water pricing is currently being undertaken by the Economic Regulation Authority. An Issues Paper was published on 9 December 2005, providing background information and outlining the issues to be investigated (ERA 2005). Submissions have been invited from industry, government and other stakeholder groups. These are available on the Economic Regulation Authority's website.

The current level of cost recovery of rural schemes is unknown, but is being reviewed by the Economic Regulation Authority. It is anticipated that the level of cost recovery is below lower bound. As a condition of receiving operating subsidies from the Western Australian Government, the cooperatives are obligated to phase-in higher charges as the subsidies are reduced. The Ord Irrigation Cooperative is phasing in increased charges to growers over ten years and will cease receiving operating subsidies in 2012-13. The Carnarvon Irrigation Cooperative is phasing in increased charges to growers over fifteen years and will cease receiving operating subsidies in 2018-19.

#### *Community Service Obligations*

The Water Corporation receives community service obligations for each irrigation scheme for the difference between full cost recovery (that is, depreciation, a return on assets, and operating and maintenance costs) and the bulk water charges. The total community service obligation received by the Water Corporation is reported in its *Annual Report* (Water Corporation, 2005). In 2005-06 the Water Corporation received a community service obligation of \$229 million for country water, sewerage and drainage operations and \$6.5 million for rural irrigation schemes (Western Australia Government, 2005).

The Ord and Carnarvon Irrigation Cooperatives receive an operating subsidy to allow the grower's cooperatives to establish themselves as a stable going concern during their first years of operation. South Western Irrigation Management Cooperative and Preston Valley Irrigation Cooperative have fully phased in charges to growers and no longer receive operating subsidies.

#### *Regional Water*

Regional water and wastewater services are provided by the Water Corporation, AQWEST and Busselton Water.

#### *Cost Recovery*

Regional water users in Western Australia are currently grouped into five charging classes where both a fixed and variable usage charge applies. The level of these charges is dependent on which class the scheme has been grouped in. Western Australia currently has a statewide uniform tariff policy in place for all customers of the Water Corporation for water consumption up to 350 kilolitres (the approximate average residential consumption). Beyond 350 kilolitres the usage charge increases depending on the cost scheme into which the town is grouped.

The Economic Regulation Authority is undertaking an inquiry into country water and wastewater pricing in Western Australia.

As a part of this inquiry, the appropriateness, efficiency and effectiveness of current approaches to country water and wastewater pricing are being examined, as well as the merits of potential alternative approaches to:

- the water usage threshold for households under Western Australia's uniform pricing policy
- the Water Corporation's five town class charges
- water service charge structures for businesses
- residential and vacant land rates for country sewerage
- the maximum rate in the dollar gross rental value wastewater service charge, and
- uniform statewide major fixture and volumetric wastewater charges for businesses.

As part of the inquiry's investigations, in proposing alternative prices and pricing structures, the Economic Regulation Authority will consider:

- the impacts on Water Corporation's costs, revenues and payments to and from the government
- the principles of the government's uniform pricing policy
- demand management targets, and
- other social, economic and environmental policy objectives.

An Issues Paper was released for comment on 9 December 2005 and, on 31 January 2006, a Draft Report was published for comment. Following a series of public forums, the inquiry's final report will be delivered to the Western Australian Government by 28 April 2006. Once this inquiry process is complete the Western Australian Government will consider the implementation of the Economic Regulation Authority's recommended reforms.

Currently, the level of cost recovery for those regional systems supplied by the Water Corporation are below lower bound. Those systems supplied by Busselton Water and AQWEST are above lower bound cost recovery, but as these water and wastewater providers do not earn a rate of return, they are below the upper bound.

Busselton Water and AQWEST are set up under the Water Board Act 1904 and have a level of independence from the Western Australian Government. These water and wastewater providers pay tax equivalent receipts to the government, but not dividends, and fund their own consumer discounts and infrastructure provisions.

#### *Cross Subsidies*

The Economic Regulation Authority notes in the Country Water and Wastewater Pricing: Issues Paper that there is cross subsidisation between residential and commercial wastewater users in country areas (ERA, 2005). Commercial wastewater users pay a statewide uniform charge. Costs that are not recovered from these users are instead recovered from residential wastewater users (based on property value). The application of uniform charging is also being investigated in the current Economic Regulation Authority review.

#### *Community Service Obligations*

Concessions on the Water Corporation's annual service charge (which covers both the water service and delivery charge and the wastewater charge for residential customers) is available to pensioners and seniors on a statewide basis. Community service obligations received by the Water Corporation are made available in the Water Corporation's *Annual Report* (Water Corporation, 2005), with greater disaggregation available in the Western Australian Budget Papers (Western Australia Government, 2005).

Community service obligations are paid to the Water Corporation due to the use of uniform tariffs for water consumption. However, a portion of the community service obligation pays for the subsidisation of country commercial water and wastewater pricing and regional wastewater pricing. The inquiry being undertaken by the Economic Regulation Authority is proposing greater transparency in the attribution of community service obligations to provide greater clarity on which user group is receiving what proportion of the subsidy.

AQWEST and Busselton Water provide internal financing for these concessions, through revenue raised from water sales.

## Discussion and Assessment

### Rural Water

#### *Irrigation Schemes*

Rural water users in Western Australia are currently grouped into five charging classes where both a fixed and variable usage charge applies. The level of charge depends on which class the scheme has been grouped. On the basis of this information the Commission considers that Western Australia has met its commitment to implement consumption based pricing in rural systems.

As only the operation and maintenance costs and a provision for renewals is recovered, it is assumed that these schemes have not achieved lower bound cost recovery. It is also unclear as to whether price paths are currently in place to achieve this or that current charges have been based on efficient resource pricing. However, the Commission notes that the Economic Regulation Authority is undertaking a review of rural water pricing and that this review is due for completion by 28 April 2006. On the basis of this information, the Commission considers that Western Australia has made some progress to meeting its commitment to move toward upper bound pricing.

At present, operating subsidies are provided to the irrigation schemes which have not achieved lower bound cost recovery. A condition of receiving the operating subsidy is that the cooperatives are obliged to phase-in higher charges. The Ord Irrigation Cooperative is phasing in increased charges to growers over ten years and the Carnarvon Irrigation Cooperative is phasing in increased charges



to growers over fifteen years. South Western Irrigation Management Cooperative and Preston Valley Irrigation Cooperative have fully phased in charges to growers and no longer receive operating subsidies. On the basis of this information, the Commission considers that Western Australia has made some progress in demonstrating that price paths are in place for increasing the cost recovery of irrigation schemes, albeit over long time frames.

The Water Corporation receives community service obligations for each irrigation scheme for the difference between upper bound cost recovery and the bulk water charges. In addition, the Ord and Carnarvon Irrigation Cooperatives each receive an operating subsidy. While the community service obligation received by the Water Corporation is reported in its *Annual Report*, it is not disaggregated into the separate irrigation corporations. On the basis of this information, the Commission considers that Western Australia has not met its commitment to separately identify and publicly report the community service obligations made to each irrigation scheme. The Western Australian Government notes that, while not publicly available, the disaggregated information is available on request from the Water Corporation.

In addition, the Commission is concerned with the use of a community service obligation payment to fund the difference between revenue received by the Water Corporation and the upper bound of cost recovery.

The agreed use of community service obligation payments is to provide relief in circumstances where an increase in water charges will lead to community hardship - it is not intended to provide the water and wastewater provider with a rate of return on their investment. Therefore, the Commission considers that the portion of the community service obligation paid to the Water Corporation that allows the Corporation to earn a rate of return on investments is a subsidy, not a community service obligation. The COAG agreement stipulates that subsidies provided to water service and delivery providers should be transparently reported and reducing over time.

It has not been made apparent that the subsidy paid to the Water Corporation is transitional, or that options have been considered to remove the subsidy. In addition, the level of the community service obligation that is provided to the

Water Corporation to make a rate of return on investment is not disaggregated or reported separately from the remainder of the community service obligation received.

#### Regional Water

Western Australia currently has a statewide uniform water tariff policy in place. At present full cost recovery is not achieved for water supplied to regional areas by the Water Corporation, and a community service obligation is provided. No information has been provided on the level of cost recovery achieved by either AQWEST or Busselton Water for their water and wastewater services, however, it is assumed that they are both above lower bound yet below upper bound cost recovery. No community service obligations are paid to AQWEST or Busselton Water.

It is unclear as to whether there is a price path in place to achieve full cost recovery in regional systems. The Western Australian Government's response to this review will be important in determining Western Australia's compliance with its commitment in this area.

On the basis of this information, the Commission considers that Western Australia has made little progress toward achieving lower bound pricing for regional areas for customers of the Water Corporation.

As noted earlier, the Commission is also concerned about the appropriateness of the payment of community service obligations to fund the difference between revenue received by the Water Corporation and upper bound cost recovery. In addition, while the entire community service obligation provided to the Water Corporation is publicly reported, it is not disaggregated to a sufficient level to provide the required transparency. On this basis the Commission considers that Western Australia has made little progress towards meeting its commitment to make community service obligations transparent.

### 5.3.2 Cost Recovery for Planning and Management

#### Assessment Issues

Western Australia is required to demonstrate that resource management costs are being recovered, consistent with COAG pricing obligations. In particular Western Australia is required to demonstrate:

- the extent to which costs associated with the provision of licenses for water extraction are being recovered;
- whether resource management costs are transparently handled and publicly reported; and
- whether adequate public consultation and education about water management charges has been undertaken.

In addition, Western Australia is asked to demonstrate its progress with identifying, estimating and attributing licensing related costs to water users to meet its full cost recovery commitments.

#### Licences

The Department of Water grants licences (water entitlements) to individuals and companies to use water resources. With some minor exceptions, these licences are granted without a charge.

The Water and Rivers Commission investigated the possibility of introducing licence fees during 2002-03. However, after consulting stakeholders and developing a possible administration fee arrangement during 2003, the government decided not to introduce licence fees, due to stakeholder concerns. Instead, the level of Water and Rivers Commission activity and the strategies for funding the Water and Rivers Commission's water licensing and compliance functions was reviewed.

It has since been determined that in order to deliver on the government's response to the Irrigation Review, to introduce longer term licences and improved trading and entitlement systems, it may be appropriate for water users to fund the costs of administering the licence regime.

#### Water Resource Management Costs

While not charging for licences, the Department of Water does impose licence conditions that transfer responsibility for some water resource management activities (and thus

some of the associated costs) to licensees. Where it is determined that extraction of water by a licence holder will inflict negative environmental externalities on other water users, they are generally expected to undertake water resource planning and management activities at their own cost. Where extractive users do not increase the need for water resource management activities, or increased water planning and management activities can not be attributed to individual licence holders, the Department of Water undertakes these activities. At present, the cost of these activities is not recovered from the water users.

In 2003 Western Australia released the *State Water Strategy*. This strategy was followed up in 2005 by the Irrigation Review Report that recommended, among other things, the introduction of fees for water resource management.

The Western Australian Government position has been that it was appropriate to fully fund water resource management from consolidated revenue because major water users already perform significant resource management activity and that it was socially equitable and appropriate, given the complexities of charging. Recurrent expenditure on activities (broadly classified as water resource information, water allocation and state development, protection and conservation, and waterways and catchments) was approximately \$55 million in 2005-06. Information on money spent on water resource management is available in the Water and Rivers Commission *Annual Report*.

In July 2005, in response to the Irrigation Review, the Western Australian Government agreed to again consider water resource management charges and asked for a detailed proposal for implementing fees to be prepared.

A Directions paper designed to be part of a public consultation process on implementation of the Irrigation Review recommendations is due to be completed in April 2006. This paper will discuss broader water resource management fees and form part of a final position paper to be presented to the Water Resources Cabinet Sub-Committee in December 2006. Government will then make a decision on fees, with implementation from 2007 onwards. The Directions paper will look at approaches to pricing and identifying costs associated with water planning and management, and the proportion of costs that can be attributed to water access entitlement holders.

## Submissions

A submission was received from World Wildlife Fund – Australia, noting the work and charging recommendations of the Economic Regulation Authority in Western Australia, and the lack of a substantial response from the Western Australian Government. The World Wildlife Fund – Australia state that existing water and wastewater charges do not adequately incorporate the cost of operating the water supply system. In particular, the costs associated with adequate provision of water for the environment in the management of surface and ground water sources have not yet been adequately determined and incorporated in water supply charging.

## Discussion and Assessment

The Commission considers that Western Australia has made little progress to meeting its commitment to identifying, estimating and attributing, and recovering the costs associated with water extraction licence provision. However, the Commission notes that Western Australia is considering the cost recovery of licence provision in response to the Irrigation Review.

At present, no water resource management and planning costs are passed onto water users, except those costs that are incurred by users in undertaking management practices as a provision of holding a licence. However, Western Australia is in the process of completing a Directions paper to be presented to the Water Resources Cabinet Sub-Committee in December 2006 that will address approaches to pricing and identify costs associated with water planning and management, and the proportion of these costs that can be attributed to entitlement holders.

Information on money spent on water resource management is available in the Water and Rivers Commission *Annual Report*. On the basis of this information the Commission considers that the water resource management and planning charges, while not passed on, are transparently handled through the Water and Rivers Commission and publicly reported through that Commission's *Annual Report*.

The Western Australian Government has, at various times, undertaken consultation with stakeholders about developing a possible administration fee for water extraction licences.

In addition, the Irrigation Review involved widespread public consultation in arriving at its recommended reforms for the state. Further widespread community consultation is proposed by the Implementation Committee, including consultation papers and public forums.

On the basis of the above information, the Commission considers that Western Australia has made progress in meeting its COAG commitment to undertake adequate public consultation and education about water management charges.

### 5.3.3 Investment in New or Refurbished Infrastructure

#### Assessment Issues

The Commission will examine compliance where Western Australia has decided to proceed with a particular project. In conducting its assessment, the Commission will consider:

- the extent to which the economic viability\* and ecological sustainability credentials of infrastructure proposals have been established prior to works commencing;
- the environmental assessment processes for all projects, whether publicly or privately funded; and
- the economic viability appraisals of new or refurbished infrastructure proposals only where governments contribute funds.

In particular, Western Australia is asked to demonstrate that its decision to proceed with the Kwinana desalination plant is based on robust economic and environmental assessments and that the plant meets the economic viability and ecological sustainability requirements of the 1994 COAG water reform agreement.

\* The NCC 2004 NCP Assessment (page1.20) explained the economic viability test as involving consideration of whether a project will deliver an overall public benefit to Australia. Commercial or financial viability is an important element, "a project that is not commercially viable may still satisfy the economic viability test if there is robust evidence that the project will deliver a net social benefit that outweighs the costs of not being commercially viable".

**Western Australia has not proceeded with the commencement of any significant water related projects in 2005.**

### Kwinana Desalination Plant

In 1996, due to concern about poor rainfall over two decades, the Water Corporation completed a detailed source development plan based on Perth's Water Future, a major study completed in 1995. The expected level of demand for water and potential water sources for 50 years ahead were identified.

The plan sought to restore the balance in the system by 2002. However, the drought of 2001 and 2002 required additional investment in new water sources, taking the total investment to \$665 million in a decade. During this period supply capacity has been doubled.

Western Australia has indicated that the cost per kilolitre for each of the water source options was estimated, and the details provided to the government. Economic instruments used to measure the expected benefits from the desalination plant included a study of willingness to pay and simulations on the costs of continued (or increased) occurrences of sprinkler bans.

In particular, the impetus behind the building of the desalination plant was to ensure the likelihood of a total sprinkler ban is 0.5 per cent (one in every 200 years). In developing new water sources, the Economic Regulation Authority recommend further consideration of the criteria used for security buffers and required probabilities for water restrictions (ERA, 2006).

While not the least cost option, the Kwinana desalination plant was selected, largely due to issues of timing and security. The Kwinana desalination plant was believed the only major source option available to provide water to the area by 2006-07 (Water Corporation, 2005). In addition, the level of security of water provision was much higher as the taking of saline water is independent of climate change impacts, and therefore very secure.

The Environmental Protection Authority conducted an environmental impact statement on the project in 2005. Stakeholder consultation occurred at various stages of the process.

The environmental approval process requires:

- protection of the water quality of Cockburn Sound
- compliance with the Cockburn Sound Environmental

### Protection Policy and the revised Environmental Quality Criteria

- minimisation of greenhouse gas emissions
- no net increase in nitrogen added to Cockburn Sound, and
- monitoring of the total dissolved solids, temperature, dissolved oxygen and sediment habitat (Water Corporation, 2005b).

The Environmental Protection Authority concluded that the Kwinana desalination plan proposal can be managed to meet the Environmental Protection Authority's objectives, and not impose an unacceptable impact on the environment. This conclusion was reached on the proviso that there is satisfactory implementation by the Water Corporation of the amended conditions, including the proponent's commitments (EPA, 2005).

### Discussion and Assessment

The decision to proceed with the Kwinana desalination plant was made on the basis of meeting increased water demand requirements in the Perth area. Economic, environmental and ecological assessments were undertaken both by the Water Corporation (as the proponent) and the Environmental Protection Authority.

The Environmental Protection Authority undertook analysis of the environmental impact of the Kwinana desalination plant. This process determined that, subject to a number of conditions, the plant was considered environmentally acceptable. Public consultations surrounding the environmental impacts of the desalination plant were undertaken at various stages of the process.

Economic analysis using consumers' willingness to pay and the costs of continued and increased sprinkler bans in the metropolitan areas were used to determine the level of benefits likely from the commissioning of the desalination plant. Evidence from these analyses indicated that the level of benefits were greater than the costs of provision. However, the Commission notes that, while this information was made available to the Western Australian Government, wider public viewing was not available. In addition, no information was made available on the costs and benefits of alternatives to the desalination plant.

The Commission also notes that the Economic Regulation Authority questions the criteria of security buffers and probabilities of requirements for water restrictions that underlie plans for development of water resources.

On the basis of the above information, the Commission considers that Western Australia has met its COAG commitment with regards to demonstrating that its decision to proceed with the Kwinana desalination plant is based on economic and environmental assessments. However, the Commission notes that greater transparency and public consideration of alternatives would have enhanced the economic assessment process undertaken.

### 5.3.4 Release of Unallocated Water

#### Assessment Issues

The 2005 NCP assessment will look for Western Australia to show that any releases of unallocated water, including recycled or other sources of water, are occurring in a manner that complies with their COAG water reform obligations. For all jurisdictions, the Commission will consider whether:

- water plans have increased allocations to consumptive use
- the water required to achieve environmental outcomes is adequately met prior to the release of unallocated water
- the impact on the environment is considered before any new entitlements are issued
- all other avenues for meeting demand have been carefully examined, and
- market-based mechanisms are employed in the release of unallocated water, including recycled water.

In Western Australia, about 2,300 gigalitres per year of water is licensed for use. Water allocations are increasing at around 100 gigalitres per year. Water systems are progressively being looked at in greater detail to make more accurate allocation decisions, particularly in areas of high demand.

In developing water management plans, the Department of Water takes into consideration the needs of the environment, social requirements and demand for water (economic requirements).

In the absence of robust science in the determination of water availability, a precautionary approach to water allocation is taken. Where possible, the Department of Water undertakes investigation to identify the groundwater or surface water dependent ecosystems in the area where water allocation is being contemplated, or unallocated water is being considered for release. If there is concern about unacceptable impacts on the dependent ecosystems from water abstraction, the Department of Water will limit the amount of unallocated water that is released by setting conservative allocation limits. This process is made a little easier where there are monitoring bores already in place and aquifer response can be observed. Where there are no monitoring bores available, or the monitoring network is insufficient, the Department of Water may require the proponent to identify dependent ecosystems, and/or undertake an investigation at their expense to demonstrate the potential impacts of their proposed water draw.

In an effort to move away from the ‘first-in-first-served’ approach to water allocation, Western Australia has successfully implemented a merit selection process in the northern Perth Basin, where the local Water Resources Management Committee has a say in the allocation of the remaining available water. This initiative has been in place in the northern Perth Basin for a number of years. The merit selection process takes a social and economic perspective by allowing the local community to have a say in the socio-economic development of their region within acceptable environmental constraints.

Additionally, the Department of Water requires water resource developments to employ water efficiency measures that can help to meet water demand in water scarce areas. Water conservation is also a standard requirement for all developments to avoid water wastage. Also, where licensees are not utilising their licensed entitlement for the original stated purpose of licence use (a requirement of obtaining the licence), the Department of Water may recoup the unused portion for either reallocation to productive use, to help meet demand, or removal from the consumptive pool for environmental outcomes.

Currently, in Western Australia, there are no extensive market based mechanisms employed in the release of unallocated water. Water trading has been introduced in

a number of areas and the take up has been quite slow, although some trades in groundwater entitlements have occurred in the Perth region and in the south west of Western Australia.

Other market-based mechanisms, such as the use of water auctions, tenders and ballots have been introduced as possible options to the local Water Resources Management Committees. However, there has been little interest in employing these mechanisms to date.

### Discussion and Assessment

Water allocations in Western Australia are increasing at around 100 gigalitres per year. Western Australia has four levels of system allocation from C1: 0-30 per cent allocated; C2: 30-70 per cent allocated; C3: 70-99 per cent allocated; and C4: 100 per cent or greater allocated. To date, approximately 15 per cent of systems have been examined in sufficient detail to determine the appropriate level of categorisation. Water systems in Western Australia are progressively moving to higher allocation categories (as new applications are being assessed and approved and licence holders increase their existing entitlements).

In developing water management plans, the Department of Water takes into consideration the needs of the environment, social requirements and demand for water (economic requirements). In the absence of robust science in the determination of water availability, a precautionary approach to water allocation, including investigations to identify the groundwater or surface water dependent ecosystems in the area where water allocation is being contemplated or unallocated water is being considered for release. If there is concern about unacceptable impacts on the dependent ecosystems from water abstraction, the Department of Water will limit the amount of unallocated water that is released by setting conservative allocation limits.

For the allocation of remaining available water, Western Australia has successfully implemented a merit selection process in the northern Perth Basin, where the local Water Resources Management Committee considers the allocation of the remaining available water. The merit selection process takes a social and economic perspective by allowing the local community to determine the socio-economic

development of their region within acceptable environmental constraints.

On the basis of this information, and subject to the concerns identified in Section 5.1.2 on Water Planning and Addressing Currently Overallocated and/or Overused Systems, the Commission considers that Western Australia has made significant progress to meeting its commitment of ensuring environmental outcomes are adequately addressed prior to the release of unallocated water, or the issue of new entitlements.

With water allocations increasing at the current rate, the Commission considers that this further underscores the need for Western Australia to adequately categorise its water systems and provide for meeting environmental water needs prior to release of unallocated water.

The Western Australian Department of Water requires water resource developments to employ water efficiency measures that assist in meeting water demand in water scarce areas. Water conservation is also a standard requirement for all developments to avoid water wastage. Also, where licensees are not utilising their licensed entitlement for the licensed stated purpose (a requirement of obtaining the licence), the Department of Water may recoup the entitlement for either reallocation to productive use, to help meet demand, or removal from the consumptive pool for environmental outcomes.

On the basis of this information, the Commission considers that Western Australia has made some progress towards meeting its COAG commitment to examine all other avenues for meeting water demand.

Currently in Western Australia market based instruments are not employed in the release of unallocated water. These instruments have been introduced as options to the local Water Resource Management Committees, however they have displayed little interest in using them. The Commission notes that such options are only feasible where there is genuine scarcity. Nevertheless, on the basis of this information, the Commission considers that Western Australia has not met its commitment to using market based instruments in releasing unallocated water.

### 5.3.5 Environmental Externalities

#### Assessment Issues

The Commission will look for Western Australia to:

- report the extent to which they are identifying and recovering environmental costs through their pricing regimes
- provide evidence that environmental costs imposed on and incurred by water businesses are transparently passed on through prices charged to water users
- where externalities are not included in pricing regimes, demonstrate price paths that will move towards achieving full cost recovery within a reasonable timeframe, and
- where not transparently incorporated into pricing regimes, show that they have identified externalities and, after examination, have concluded that inclusion of an externality in pricing is not feasible or practical.

In particular, Western Australia is asked to demonstrate that its approach to externalities is consistent with its COAG water reform obligations, including that externalities:

- are being treated in a robust and transparent manner, and
- are being incorporated into pricing for full cost recovery.

As noted earlier, the Irrigation Review recommendations to be investigated by the Implementation Committee, include the introduction of water resource management charges, which will identify and seek to recover environmental costs from all water users. The Western Australian Government is expected to consider this proposed reform measure in late 2006.

In 2003 the Western Australian Government's *State Water Strategy* opted for a policy of continuing to fund resource management from consolidated revenue. Further investigation and consultation with stakeholders was recommended. The Irrigation Review has recommended that resource management costs be charged to water users. While consideration of the mix of these costs and benefits has occurred within government to determine how recovery might be undertaken, it has not yet been widely discussed with stakeholders.

The extent to which businesses incur the costs of meeting standards of environmental performance are reflected in cost structures and recovered through prices.

The Economic Regulation Authority, as a draft finding, suggested that the costs of environmental impacts caused by provision of water and wastewater services should be passed through to water users. Should government determine that full cost recovery should be implemented, attention will be given to the efficiency and equity considerations of different mechanisms that might be used to recoup such costs (ERA, 2005).

The Western Australian Government has yet to consider the recommendations of the Economic Regulation Authority review. However, it has indicated that it is actively investigating a similar recommendation made by the Irrigation Review.

#### Submissions

A submission was received from the Western Australian Environmental Defenders Office. This submission reviewed the legal authority of the Western Australian Government to set prices for water, including the costs of environmental externalities, and proposed a number of arguments in favour of pricing water to reflect seasonal and resource based scarcity as a means of mitigating environmental externalities.

With regard to environmental externalities, the submission notes that while there is limited experience in using charges to internalise environmental externalities from water use, Western Australia should be undertaking trials to increase understanding of this instrument.

#### Discussion and Assessment

At present a limited range of environmental externalities from water extraction are being met through provisions attached to water extraction licences. Where the issuing of a licence is determined to create specific environmental harm, the holder of the licence is required to undertake management activities at their own cost. Where the issue of a licence does not increase the need for new or further management of the water resource, or the need for water management activities can not be attributed to a specific

licence holder, the Department of Water undertakes the required management activities. The cost of these activities is not recovered from water users.

A proportion of possible environmental externalities are managed through regulation. Where this is the case, or a water provider undertakes required activities to control or offset environmental externalities, these may be incorporated into the price structures.

On the basis of this information, the Commission considers that Western Australia has not met its COAG commitment to provide evidence that environmental externality costs incurred are recovered or transparently passed onto users.

Water planning and management and most environmental costs incurred from water use are not incorporated into water charges. As such the Commission considers that Western Australia has not met its commitment to identify a price path for including environmental externalities into the charging structure, or reasons for not doing so. However, the Commission notes that further deliberation on this point is expected in Western Australia at the end of 2006. As in many other areas, the government's detailed response to the Irrigation Review will be critical in determining its ongoing compliance with Western Australia's COAG commitments.

### 5.3.5 Institutional Reform

#### Assessment Issues

##### *Independent economic regulation*

Western Australia is required to provide information on the role of economic regulators in setting or reviewing prices, or price setting processes, and the extent to which conflicts of interest are addressed where the water industry regulator and the service provider are responsible to the same Minister.

The Commission is interested in the public reporting and consultation aspects of the independent body's work, as well as its findings in relation to pricing compliance. Where the independent body's role is to review rather than set prices, the Commission will examine the manner in which the results of reviews are addressed by the relevant government, especially where pricing decisions are at variance with pricing recommendations.

In particular, the Commission will examine the extent to which Economic Regulation Authority arrangements provide for sufficient independence, transparency and public scrutiny in the price setting process, consistent with obligations established under the 1994 Water Reform Framework. Western Australia should report on the frequency and extent to which its pricing and pricing processes are reviewed by the Economic Regulation Authority, and how the results of reviews are addressed.

##### *Benchmarking*

The Commission will look at whether participation is continuing, to ensure that there has not been a decline in participation, for metropolitan, non-major urban and rural service providers in benchmarking activities.

##### *Institutional separation*

Western Australia is required to demonstrate that its institutional arrangements are continuing to achieve appropriate separation.

In particular, Western Australia is asked to report on its arrangements for considering customer concerns and the performance of the multi-utility ombudsman in relation to water.

##### *Devolution of irrigation scheme management*

Western Australia is required to show that the transfer of management of the Ord Irrigation Scheme to the Ord Irrigation Cooperative has been substantially completed.

##### *Independent Economic Regulator*

**In Western Australia, ministerial responsibilities are separated and conflicts of interest between service provision and regulatory roles are avoided. The responsibility for the regulation of Western Australia's water industry is vested with the Treasurer, whilst the ministerial responsibility for oversight of Western Australia's service providers falls to the Minister for Water Resources.**

**The Economic Regulation Authority is the Western Australia's independent regulatory authority with responsibility for the economic regulation of Western Australia's water industry. The Economic Regulation Authority Act 2003 clearly states that, in the performance of its functions, the Economic Regulation Authority is independent of direction or control by the state, ministers or officers of the state.**



When conducting a pricing inquiry, the Economic Regulation Authority undertakes an extensive review and public consultation process that incorporates a number of public forums and receipt of public submissions to both an issues paper and draft report. On finalisation of its inquiry, the Economic Regulation Authority submits a final report containing pricing recommendations to the Western Australian Government. As with all submissions and information relating to the inquiry, in line with the Economic Regulation Authority's objective to maintain a fully transparent process, the final report is made available to the public.

The objective of the procedure is to provide a relatively open and transparent process while satisfying the Terms of Reference provided by the government. The publication process involves a mix of opportunities to make formal written submissions and less formal verbal submissions plus opportunities for questions at public forums.

#### Institutional Separation

At present, water licences specify that complaints which are not resolved by the water service provider within 21 days, must be referred to the Department of Water. The Department of Water may then investigate the complaint, and generally attempt to mediate between the consumer and the water service provider. The Department of Water does not have the power to make orders for the resolution of disputes and instead seeks to have the parties voluntarily adopt a fair outcome.

In 2003, the Western Australian Government committed to the introduction of a water ombudsman. The ombudsman will have the power to direct water service providers and fund the complaints process through contributions from water service providers.

As of early January 2006 a draft of the water ombudsman paper is at the State Solicitor's Office for confirmation that the proposed legislative changes to introduce a water ombudsman are correct. When this advice is received, it will be submitted to Minister Kobelke for approval for public release. Comment from the public is invited on the paper until 26 February 2006. The working group will then produce a final proposal to be submitted to the Cabinet Sub-Committee.

#### Benchmarking

The Water Corporation is a member of the Water Services Association of Australia and as such provides information on its water service and delivery activities. Harvey Water, the Carnarvon and Ord Irrigation Cooperatives participate in the Australian National Committee on Irrigation and Drainage benchmarking activities; the only irrigation cooperative not participating is the Preston Irrigation Cooperative. In addition, Western Australia is contributing towards development of a national benchmarking framework under the National Water Initiative (COAG, 2004a).

#### Devolution of Irrigation Scheme Management

In line with the COAG requirements for the devolution of irrigation scheme management, the Western Australian Government, through the Water Corporation, has transferred each of its irrigation schemes to local growers' cooperatives.

The Water Services Licensing Transfer Order (Ord) 2005 was published in the Gazette 22 October 2004, and the Notice of its taking effect on 28 April 2005 was published in the Gazette 7 October 2005.

This is the conclusion of a prolonged discussion process with communities involved.

#### Discussion and Assessment

##### Independent Economic Regulator

In Western Australia, ministerial responsibilities are separated and conflicts of interest between service provision and regulatory roles are avoided. The responsibility for the regulation of Western Australia's water industry is vested with the Treasurer, whilst the ministerial responsibility for oversight of Western Australia's service providers falls to the Minister for Water Resources.

On the basis of the above information, the Commission considers that Western Australia has met its commitment to handle potential conflicts of interest.

The Economic Regulation Authority reviews the charges set by the three major water and wastewater service providers (Water Corporation, AQWEST and Busselton Water) for the recovery of water service provision costs. The Economic Regulation Authority is independent of direction or control by the State, any minister or officer of the State.

In conducting pricing inquiries, the Economic Regulation Authority undertakes extensive review and public consultation processes that incorporates a number of public forums and receipt of public submissions to both an issues paper and draft report. On finalisation of its inquiry, a final report containing pricing recommendations is submitted to the Western Australian Government. All reports, submissions and information relating to the inquiry is made available to the public. Water charges are to be reviewed every four years by the Economic Regulation Authority.

On the basis of the above information, the Commission considers that Western Australia has met its COAG commitments to report on the role of the independent regulator, and that the regulator has sufficient transparency and public consultation as part of its price review process. However, it is so far unclear as to what extent these recommendations are given consideration by the Western Australian Government.

#### Institutional Separation

At present, water licences specify that complaints which are not resolved by the water service provider within 21 days, must be referred to the Department of Water. The Department of Water may then investigate the complaint, and generally attempts to mediate between the consumer and the water service provider. The Department of Water does not have the power to make orders for the resolution of disputes and always seeks to have the parties voluntarily adopt a fair outcome.

In 2003, the Western Australian Government committed to the introduction of a water ombudsman who will have the power to direct water service providers. Progress, albeit slow, is being made to establish the water ombudsman.

On the basis of this information, the Commission considers that Western Australia has met its COAG commitment to report on the arrangements for considering customer complaints and the performance of the water ombudsman.

#### Benchmarking

The Water Corporation is a member of the Water Service Association of Australia and the Australian National Committee for Irrigation and Drainage and as such provides information on its water service and delivery activities.

In addition, Western Australia has participated in the development of a national framework for benchmarking of pricing and service quality. On the basis of this information the Commission considers that Western Australia has met its COAG commitment to demonstrate that there is continued participation in benchmarking activities for metropolitan, urban and rural service provision.

#### Devolution of irrigation Scheme Management

With the Water Services Licensing Transfer Order (Ord) 2005 published in the Gazette 22 October 2004, and the Notice of its taking effect on 28 April 2005 published in the Gazette 7 October 2005, the Commission considers that Western Australia has met its commitment to show that the transfer of management of the Ord Irrigation Scheme to the Ord Irrigation Cooperative has been substantially completed.

## 5.4 Community Partnership and Adjustment

#### Assessment Issue

For the 2005 NCP assessment, the Commission will be examining Western Australia's public consultation and education arrangements for consistency with its COAG obligations, for all aspects of the COAG water reform agenda.

#### Public Consultation and Education Arrangements

Western Australia has consulted publicly on a range of water reform matters. Previous sections of this assessment detail Western Australia's consultation and education initiatives in relation to water resource planning and water pricing. In summary:

- Western Australia undertakes public consultation and education before implementing a water management plan. For example, before implementing the groundwater management plan for the Carnarvon irrigation area, the Carnarvon Water Allocation Consultative Committee reviewed the existing 'rules of the river'. The consultative management plan reset the rules and introduced provisions that considered the uniqueness of the groundwater resources that relied entirely on river flow. In addition, Western Australia advised the Commission that the community accepted the need to reduce the

overallocation situation to sustainable levels within seven years through education about the water quality constraints and the vulnerability of their water resources through over abstraction.

- The Department of Water has established two Water Resource Management Committees to help with the management of groundwater resources and development of water management plans. The Whicher Water Resource Management Committee has assisted with the Department of Water's consultation and education processes regarding the Water Corporation's South West Yarragadee project to transfer 45 gigalitres per year from the southwest region to Perth. The committee will also assist in the final determination of environmental water provisions for the project and have a role to play in the formal public comment period of the management plan. The Gingin-Dandaragan Water Resource Management Committee is involved in a number of water management activities north of Perth. For example, the Committee assists the Department of Water with licensing decisions.
- When conducting a pricing inquiry, the Economic Regulation Authority undertakes a review and public consultation process that includes a number of public forums and the receipt of public submissions to both an issues paper and draft report. On finalisation of its inquiry, the Economic Regulation Authority submits a final report containing pricing recommendations to the Western Australian Government. As with all submissions and information relating to the inquiry, the final report is made available to the public on Economic Regulation Authority's website, in line with the Economic Regulation Authority's objective to maintain a fully transparent process.
- A review of Western Australia's irrigation water use (the Irrigation Review) was completed in July 2005 following eight months of public consultation, and consideration of 50 submissions received on behalf of 58 organisations and individuals. The review resulted in nine key reform recommendations, including changes to irrigation practices, water use and resource management (see section 5.1.1 for additional recommendations). The Irrigation Implementation Committee was subsequently formed to oversee implementation of the

recommendations by interagency project teams.

Water users and key stakeholders will continue to be consulted during implementation of the recommendations through a Water Forum. For example, the Western Australia Government has indicated that the community and stakeholders will have input into the development of a strategic plan for water (the State Water Plan) and subsequent regional water plans. Consultation with peak bodies and industry groups will be coordinated through the Water Forum. In addition, regional workshops are expected to be held around the state in May 2006 to inform the development of the State Water Plan.

## Discussion and Assessment

Western Australia consults publicly on water reform matters. Western Australia undertakes public consultation and education before implementing a water management plan. The Department of Water has established two Water Resource Management Committees to help with the management of groundwater resources and development of water management plans.

The Commission notes that Western Australia intends to encourage community and stakeholder input into the development of the State Water Plan and subsequent regional water plans.

The Commission considers that Western Australia has met its COAG commitment in this area.

## 5.5 National Water Quality Management Strategy

### Assessment Issues

The Commission is looking for Western Australia to demonstrate continued and active implementation of the National Water Quality Management Strategy (NWQMS). In undertaking this assessment, the Commission will be guided by the expectations identified in the 2001 paper on implementation and the approach taken in previous National Competition Policy assessments. The Commission will consider the extent to which the implementation of other water reform commitments recognises and gives effect to the NWQMS.

The 2005 National Competition Policy assessment will consider Western Australia's implementation of the State Water Quality Management Strategy including: progress in development of institutional frameworks for consistent approaches to management of water quality; development of environmental values, quality objectives and quality criteria for the implementation of SWQ6; and implementation of appropriate monitoring systems for SWQ6.

The Commission expects Western Australia to demonstrate that it has completed the implementation of the guidelines it nominated as priorities for 2004-05.

In 2001 Western Australia agreed to a two-yearly review of its implementation of National Water Quality Management Strategy (NWQMS) guidelines. The 2003 National Competition Policy assessment examined Western Australia's progress during this timeframe, finding that Western Australia's overall implementation of the NWQMS arrangements was slow.

In response, the National Competition Council assessed Western Australia's progress in implementing the NWQMS again in 2004, particularly in relation to implementation of guidelines for fresh and marine water quality and guidelines for water quality monitoring and reporting (NWQMS papers 4 and 7). The 2004 assessment found that Western Australia had satisfactorily addressed its COAG commitments for the 2004 National Competition Policy assessment, noting in particular its release of the *State Water Quality Management Strategy No. 6 (SWQ6)* (Western Australia Government, 2004),

which encompasses implementation of NWQMS papers 4 and 7.

Despite this progress, the National Competition Council concluded that implementation of the NWQMS remained incomplete in several areas, including the implementation of the guidelines for drinking water (NWQMS paper 6), groundwater protection (paper 8), urban stormwater (paper 10), effluent management (paper 11), reclaimed water (paper 14), and dairy sheds and processing plant effluent (papers 16a and 16b).

### State Water Quality Management Strategy

Western Australia reported that during 2004-05 its six Natural Resource Management regions developed Regional Natural Resource Management Strategies (except for the Rangelands Group, which is expected to do so during 2005-06) that deal with water quality and on ground implementation of the State Water Quality Management Strategy (SWQMS), including SWQ6, which encompasses implementation of NWQMS papers 4 and 7. These regions manage water quality, and associated assessment and reporting issues for Western Australia's inland waters.

With regard to the management of water quality in coastal waters, Western Australia reported its recent progress implementing SWQ6 in the Pilbara, through the Pilbara Coastal Waters project. Community and stakeholder views on environmental values and environmental quality objectives for the Exmouth Gulf and Pilbara marine environments were obtained during a public consultation process conducted from September to November 2004 by the Department of Environment. The public consultation outcomes have since been analysed and will guide development of goals for environmental quality to manage the effects of diffuse and point source pollution, and to maintain marine health.

The next major phase of the Pilbara Coastal Waters project will be to develop specific criteria for water and sediment quality indicators. The Department has completed a survey of background water quality and is currently conducting a survey of background sediment quality for the region. These regional data will be used together with approaches recommended by the Australia Water Quality Guidelines to develop the criteria. Once developed, the criteria will be

used as benchmarks against which to assess the results of monitoring programs and to determine whether the environmental quality objectives are being achieved and the environmental values protected (DoE, 2005a).

SWQ6 has also been implemented in Cockburn Sound, Western Australia's most intensively used marine embayment (DoE, 2005b, p. iii). Western Australia released the *State Environmental (Cockburn Sound) Policy 2005* in January 2005. The policy, which will be implemented through existing statutory powers under the *Environmental Protection Act 1986*, has the primary aim of declaring, protecting and maintaining the environmental values of Cockburn Sound.

The policy also provides for the:

- implementation of the *Environmental Management Plan for Cockburn Sound and its Catchment* (DoE, 2005b), which outlines on-ground actions for implementing the policy, and establishes the particular roles and responsibilities of managers and user groups; and
- investigation and monitoring of Cockburn Sound, as described in the *Manual of Standard Operating Procedures for Environmental Monitoring against the Cockburn Sound Environmental Quality Criteria (2003 – 2004)* (EPA, 2005).

#### Implementation of NWQMS Guidelines

Western Australia reported the following progress in implementing the NWQMS guidelines it nominated as priorities for 2004-05.

##### *Drinking Water Guidelines (NWQMS paper 6)*

Western Australia incorporated the Australian Drinking Water Guidelines (NHMRC & NRMCC, 2004) into its government policy in the *State Water Strategy 2003* and *State Sustainability Strategy 2003*.

Western Australia reported that it has prepared an overarching *Public Drinking Water Resource Policy* that reflects existing custom and practice and the new catchment to consumer framework approach promoted in the Australian Drinking Water Guidelines. The approval of the 2004 Australian Drinking Water Guidelines in December 2004 assisted in approval of this new Department of Environment policy in late 2005.

Western Australia also expects the release of the 2004 Australian Drinking Water Guidelines to provide an opportunity to promote its State Water Quality series document 3 (SWQ3). SWQ3 is planned to promote the Australian Drinking Water Guidelines through Western Australia Government agencies to ensure the significance of drinking water catchments are properly reflected in all government agency decision making processes. SWQ3 was on hold pending the final approval of the Australian Drinking Water Guidelines. Western Australia now expects SWQ3 to be completed during 2005-06.

##### *Groundwater Protection (NWQMS paper 8)*

Western Australia advised the Commission that its groundwater protection program is consistent with NWQMS Guideline 8. To assist with implementation of the NWQMS guideline, Western Australia is preparing a Water Quality Protection Note, which is due for completion by June 2006. The Water Quality Protection Note will recommend best management practices for various land uses that have a strong likelihood of impacting upon the quality of Western Australia's groundwater resources.

In addition, the Department of Water is continuing to work with Western Australia's planning agencies to ensure that groundwater protection requirements are integral within the land-use planning process.

##### *Urban Stormwater (NWQMS paper 10)*

The *Stormwater Management Manual for Western Australia* (DoE, 2004a) will provide coordinated guidance on current best management practice for stormwater management in Western Australia. At the time of the 2004 National Competition Policy assessment, Western Australia had released Chapters 1 – *Introduction*, 2 – *Understanding the Context* and 8 – *Education and Awareness for Stormwater Management* of the manual.

Western Australia reported that Chapter 7 – *Non-Structural Controls* and a decision flow chart for planners and designers titled *Decision process for stormwater management in WA* (DoE & SRT, 2005) was released in May 2005, and that further progress will be subject to available funding.

*Effluent Management (NWQMS paper 11)*

Western Australia advised the Commission that this guideline represents an overview for all sewerage system guidelines (Guidelines 11 to 15). As such the work previously completed on each guideline 12 to 15 means a separate implementation plan for Guideline 11 is not needed, but it may be progressed if interest from other agencies is received in 2006. Additionally, effluent management is subject to the Environmental Protection Authority's licence assessment and condition setting process that inherently considers the NWQMS series of documents.

Western Australia also indicated that a 'Wastewater Management Framework' is being progressed to enhance existing sewerage system processes and practices in Western Australia.

*Reclaimed Water (NWQMS paper 14)*

Western Australia's *State Water Strategy* considers reclaimed waste and deals with greywater recycling and scheme-based reclamation and its use for industry, parks, gardens and horticulture. Western Australia indicated that the development of implementation plans will be considered under this framework.

Western Australian is progressing reclaimed/ recycled water issues for industry, parks/ ovals and agriculture use. The Environmental Protection Authority in Western Australia held six 'Managed Aquifer Recharge – using recycled water' workshops and finalised its report to government in October 2005.

The Premier has also approved projects to further progress Western Australia's knowledge of the chemicals of concern to the environment and people. The Premier's *State Water Strategy* Taskforce is overseeing ongoing progress of this project.

*Dairy sheds and processing plant effluent (NWQMS papers 16a and 16b)*

Western Australia reported that a 1998 dairy farm effluent guideline titled *Environmental management for animal based industries – Dairy farm wastewater 1998* exists, which considers NWQMS outcomes. In addition, regulations for effluent management that will apply to dairying are being progressed.

Western Australia is also preparing a best management practice manual for dairying. 'DairyCatch' is an industry led program looking at effluent and nutrient management and

water use efficiency. There are four 'Monitor Farms' in place to measure the costs and benefits of best practice.

With regard to dairy processing sheds, Western Australia reported that they are subject to licensing under the *Environmental Protection Act 1986*. The licenses use NWQMS outcomes to set conditions to protect water quality. In addition, a Dairy Processing Plant Water Quality Protection Note was released in July 2004 (DoE, 2004b).

*Water Reform Commitments*

The *Environmental Water Provisions Policy for Western Australia* describes the approach to be followed by the Department of Water in determining how water will be provided to protect ecological values when allocating the rights to use water in Western Australia. Under the policy, water quality issues need to be considered in four main areas when establishing environmental water requirements<sup>5</sup> and environmental water provisions<sup>6</sup>. These are where:

- part of an environmental water requirement may be required to address water quality problems that are mostly caused by surface water diversions or groundwater abstraction (e.g. where river pools were previously oxygenated by continuous flow or low oxygen levels in wetlands have been caused by lower than normal water depths)
- water regimes identified as environmental water provisions may need to have associated water quality parameters to ensure appropriate protection of ecological and social values (e.g. when water is released from a reservoir or water is pumped into a wetland from a deep aquifer)
- there is a need to establish mitigation water requirements, as defined in the policy, to provide for the flushing of algal blooms or the dilution of saline systems affected by dryland salinity or similar, and
- the implementation of environmental water provisions would not make a significant improvement to wetland or river health unless other actions were taken to improve water quality problems associated with catchment or waterway management (WRC, 2000:18).

<sup>5</sup> Environmental Water Requirements are the water regimes needed to maintain ecological values of water dependent ecosystems at a low level of risk.

<sup>6</sup> Environmental Water Provisions are the water regimes that are provided as a result of the water allocation decision-making process taking into account ecological, social and economic impacts.

## Discussion and Assessment

Western Australia has continued to implement elements of the NWQMS through its State Water Quality Management Strategy (SWQMS) since the 2004 National Competition Policy assessment. Six of Western Australia's seven Natural Resource Management regions have developed Regional Natural Resource Management Strategies that deal with on ground implementation of the *State Water Quality Management Strategy No. 6* (SWQ6) (Western Australia Government, 2004) within the state's inland waters. The Commission acknowledges that SWQ6 is also being implemented in coastal waters, including Cockburn Sound—under the *State Environmental (Cockburn Sound) Policy 2005*—and Exmouth Gulf and the Pilbara through the Pilbara Coastal Waters project.

The Commission recognises that Western Australia incorporates the NWQMS in its water resources planning and management processes. Under the *Environmental Water Provisions Policy for Western Australia*, water quality issues must be considered when establishing environmental water requirements and environmental water provisions.

Western Australia has continued to progress implementation of the NWQMS guidelines it nominated as priorities for 2004-05. While the Commission expected Western Australia to have completed implementation of these guidelines for this assessment, the Commission nevertheless acknowledges that Western Australia is actively incorporating these guidelines into regulations, water quality protection notes and best management practice manuals.

On the basis of the above discussion, the Commission considers that Western Australia has made satisfactory progress towards meeting its COAG commitment in this area.

# 6 SOUTH AUSTRALIA





## SOUTH AUSTRALIA

### 6.1 Implementation

#### Assessment Issues

The Commission is looking for South Australia, as a signatory to the National Water Initiative, to:

- have completed its National Water Initiative Implementation Plan
- where cross-jurisdictional water sharing agreements exist, have commenced a review of existing agreements to ensure their consistency with the National Water Initiative and identify those instances where any new agreements may be required, and
- have commenced a process to review the 1992 Murray-Darling Basin Agreement for consistency with the National Water Initiative.

South Australia provided the Commission with a preliminary draft implementation plan in July 2005. This draft was assessed by the Commission and comments were given back to South Australia on how the implementation plan could be improved for it to be considered for accreditation.

At the time of this National Competition Policy assessment, the Commission has yet to receive a revised implementation plan from South Australia.

South Australia is currently a signatory to three cross-jurisdictional water sharing arrangements: the 1992 Murray-Darling Basin Agreement (MDBC, 1992); the 1985 Border Groundwaters Agreement and the Lake Eyre Basin Intergovernmental Agreement.

The review process for the 1992 Murray-Darling Basin Agreement has not commenced. Signatories to this agreement include the Australian, New South Wales, Victorian, South Australian, Queensland and Australian Capital Territory governments.

A review of the 1985 Border Groundwaters Agreement between Victoria and South Australia for its consistency with the National Water Initiative (COAG, 2004a) has not commenced. However, the agreement has been reviewed to better address emerging groundwater management issues and specification of entitlements.

South Australia is a signatory to the Lake Eyre Basin Agreement with Australian and Queensland governments. This agreement is currently being reviewed, in accordance

with a commitment to review after five years from commencement. The Australian Government is currently drafting the terms of reference for the review, which will aim to ensure the outcomes of the agreement are consistent with the National Water Initiative. The review is due to be completed in early 2006.

The South Australian Government has recently reviewed the boundaries of the Lake Eyre Basin Agreement area (within its own jurisdiction) and is now considering the outcomes of the review, including the possible expansion of the agreement area in South Australia.

There is no formal agreement for the joint management of the Great Artesian Basin's groundwater resources. South Australia is represented on the Great Artesian Basin Coordinating Committee, along with the Australian, New South Wales, Queensland and Northern Territory governments and stakeholders, to improve resource management in the basin ([www.gabcc.org.au](http://www.gabcc.org.au)).

#### Discussion and Assessment

The timetable for South Australia to complete an implementation plan and have it assessed and accredited by the National Water Commission has been revised. The National Water Commission is expected to consider plans for accreditation early in 2006.

Only one of South Australia's cross-jurisdictional agreements is being reviewed—the Lake Eyre Basin Agreement. The Commission notes that there has been no indication from Murray-Darling Basin jurisdictions on the timing of the review of the 1992 Murray-Darling Basin Agreement.

The Commission notes that South Australia does not appear to have any mechanisms in its water reform framework for identifying areas that could potentially require a new water sharing agreement between jurisdictions. The Commission notes, however, that South Australia is participating in national processes under the National Water Initiative to carry out water reform activities both within the state and across jurisdictions, with agreed timeframes, to improve water resource management.

The Commission considers that South Australia has made satisfactory progress towards meeting its COAG commitment in this area.

## 6.2 Water Access Entitlements and Planning Framework

### 6.2.1 Water Access Entitlements

#### Assessment Issues

The Commission is seeking detailed information from South Australia with regard to its current arrangements for the provision of water access entitlements. The Commission will be looking for South Australia to:

- have completed the conversion of water access entitlements to entitlement systems in line with the principles and timeframes of its 1994 Water Reform Framework commitment, or if not complete, have completed the conversion of entitlements in the South East Catchment due in 2005 in line with its identified timetable and consistent with the National Water Initiative access entitlement framework
- demonstrate a clear process that ensures the conversion of the remaining entitlements by December 2006, consistent with the National Water Initiative access entitlement framework
- demonstrate the commencement of incorporation of the National Water Initiative water access entitlement requirements into its legislative and administrative regimes
- have made significant progress in the development of compatible, publicly accessible systems for registering water access entitlements and trades, including recognition of third party interests (such as the interests of financial institutions), and
- report on the public consultation and education processes in place for the introduction or review of entitlement regimes.

**The South Australian Government has legislated to establish systems of water entitlements under the *Natural Resources Management Act 2004*. This Act replaced many pieces of natural resource management legislation on 1 July 2005. It also replaced the *Water Resources Act 1997*, but with few changes to its provisions.**

**Under the *Natural Resources Management Act 2004*, water resources in South Australia are allocated in prescribed water resource areas as water licences with an associated water allocation for either taking water or for holding water.**

**Areas are prescribed only after the water resource has been stressed by increased development. The Act distinguishes between surface water (overland flow), watercourses and groundwater—each of which may be prescribed in its own right. The subsequent water allocation plans cover only the specific resource that is prescribed. See Section 6.2.3 on *Water Planning and Addressing Currently Overallocated and/or Overused Systems*.**

**Under the *Natural Resources Management Act 2004* (as previously provided for under the old *Water Resources Act 1997*), South Australia is converting existing water entitlements into water licences and water permits through the development of water allocation plans. Water allocation plans are the primary tool for controlling the allocation, use and management of water resources in a prescribed area for surface water or groundwater.**

#### Water Licences

**Under the *Natural Resources Management Act 2004*, a water licence is required to take water from a prescribed water resource. Water licences are not required for water that is used for stock and domestic purposes, except in the Murray River, the Northern Adelaide Plains Prescribed Wells Area, and the Far North Wells Prescribed Area.**

**Water licences specify the annual volumetric allocation and the condition of use. They are the holder's personal property, issued in perpetuity (unless terminated or reduced under the *Natural Resources Management Act 2004*<sup>1</sup>) as a share of a specified consumptive pool, separate from land title, transferable and enforceable.**

**Licensees must also hold a water affecting activity permit to be able to construct works to capture overland flow, install groundwater bores, or purchase water from a water supplier.**

<sup>1</sup> A water allocation attached to a water licence may be reduced if:

- it is necessary to prevent a reduction in water quality or to prevent damage to an ecosystem
- there is insufficient water to meet existing or expected future demands, or
- there is a reduction in the quantity of water available under intergovernmental agreements covering the Murray-Darling Basin or groundwater.

### Water Allocations

The *Natural Resources Management Act 2004* provides for both water (holding) allocations and water (taking) allocations. These allocations specify the volume of water that may be held or taken under the water licence to which it is attached. Water allocations authorise the taking of water from an area prescribed for surface water or groundwater.

A water (taking) allocation specifies the amount of water that a holder of a water licence is entitled to take (in a physical sense). A site-use licence is required to specify which piece of land the water will be used on. Water (taking) allocations are provided for in all water allocation plan areas.

A water (holding) allocation enables a person to hold water (in an administrative sense) but does not enable them to use it. Because water is not actually used under a water (holding) allocation, a site use licence is not needed. Water licence holders must first apply to convert the amount of water being held under a water (holding) allocation into a water (taking) allocation before they can use it. Water (holding) allocations are provided for in the Murray River and the South East Catchment only.

Water users in a water supply scheme area must hold either a water affecting activity permit (where they are purchasing water from the supplier who holds a water licence), or a water licence (where they already own the water, but need it to be delivered). Site use impacts are assessed before a permit or licence is issued.

### Licensing in Non-prescribed Areas

Water entitlements are issued only for prescribed resources. There is no licensing system for water resources in the non-prescribed areas of South Australia, which represents an estimated 13 per cent of surface water resources and 12 per cent of groundwater resources.

A majority of the prescribed resource areas in South Australia prescribe only one component, such as just groundwater or just surface water, and only water from the prescribed resource is licensed. The other types of water resources found within a prescribed area are not licensed. Nevertheless, the legislation requires that water allocation plans take into account the impact on other resources, and the impact of other resources on the prescribed resource. In more recent planning, the areas prescribed have generally included surface water, groundwater and overland flow.

### Conversion of Water Access Entitlements

The *South Australian State Water Plan 2000* (DWR, 2000a and 2000b) sets 2005 as the target for converting all water allocations from an area basis to a volumetric base, and for all water use to be measured. At the time of the 2003 National Competition Policy assessment (NCC, 2003a), South Australia had finished converting water allocations to a volumetric basis in most areas of the state.

The main outstanding area (which was also outstanding for the 2004 National Competition Policy assessment (NCC, 2004b)) was the South East Catchment, which is dominated by the Millicent Coast Catchment. South Australia expects approximately 56 per cent of entitlements in the South East Catchment to still be area-based and crop-based in 2005, with the conversion process to be completed for these remaining entitlements by July 2007. The current timetable for conversion of entitlements and metering in the South East Catchment, while not in line with that agreed to in the 1999 implementation programme, is as follows:

- develop technical and policy framework for conversion (completed in October 2005)
- incorporate policy framework into water allocation plans by October 2006
- determine and re-issue water licences with volumetric allocations by July 2007
- install meters for all licensed water use by July 2006, and
- inspect and seal installed water meters by July 2007.

South Australia has demonstrated a clear process for the licensing of consumptive use for stock and domestic purposes in the River Murray Prescribed Watercourse, the Northern Adelaide Plains Prescribed Wells Area, and the Far North Wells Prescribed Area.

The decision to license stock and domestic use is made when a water resource is being prescribed for the first time. Users below certain threshold limits are exempt from requiring a licence, although they will still be managed by a permit provision through the regional natural resources management plan and water allocation plan.

### Compatible Entitlement Register

In line with the requirements of the *Natural Resources Management Act 2004*, South Australia maintains a register of water licences.

As noted in the 2004 National Competition Policy assessment, the South Australian register records all water licences and transfers, and includes provision for the registration of third-party interests. Registered third parties must be notified before a licence transaction may proceed.

This register is a publicly accessible system, which can be accessed at offices of the South Australian Department of Water, Land and Biodiversity Conservation. The register is not available over the Internet.

It was noted in the 2004 National Competition Policy assessment that South Australia expected to implement the first stage of upgrading the registry system, the Water Information and Licensing Management Application, in 2004. The system incorporates the major business processes required to support the administration of South Australia's water legislation, including tracking water licence applications, transferring water licences and allocations, and collecting levies, fees and charges. The system is now operational, but will continue to be refined.

South Australia is participating in the development of nationally compatible registers for water access entitlements through an intergovernmental committee under the Natural Resources Management Ministerial Council. See Section 6.3 on Water Markets and Trading.

### Public Consultation and Education

Under the *Natural Resources Management Act 2004* (implemented in July 2005), a statewide Natural Resource Management Council has been developed, along with eight new regional Natural Resource Management Boards across the entire state. Public consultation is the responsibility of the boards. The boards and the council build on the work done by the many Catchment Water Management Boards throughout South Australia.

In the process of developing a natural resource management plan, the Natural Resource Management Board is required to conduct at least one public meeting with stakeholders and the community. The water-licensing regime is covered

through this process. This meeting provides an opportunity for the community to raise issues with the draft plan, which are to be considered before it is finalised.

In addition, there is an opportunity for the public to make submissions after a draft plan is released for comment.

Catchment Water Management Boards operated before the new Natural Resource Management Boards were introduced; they will continue to operate across most of the eight regions of South Australia until the new regime is fully in place. As part of the transition arrangements, the Catchment Water Management Boards will continue to conduct consultation and educational activities under the delegated authority of the new Natural Resource Management Boards. Their other main role—to consider social, economic and environmental issues—will not continue.

## Discussion and Assessment

### Water Licences

The *Natural Resources Management Act 2004* provides a system for the allocation of water resources in prescribed water resource areas in South Australia.

The Commission notes that there is no formalised licensing system for water resources in regions that are not in a prescribed water resource area—these areas generally have a lower level of water resource development. The reliability of this approach depends on the adequacy of the process for prescribing water systems as the precursor for licensing water resources. This process is discussed further in Section 6.2.3 on Water Planning and Addressing Overallocation and/or Overused Systems. The Commission also notes that for areas prescribed for only one type of water (for example, just groundwater) the other types of water that are not prescribed remain unlicensed. The Commission considers that this could be better addressed (where relevant) through arrangements for integrated management of surface water and groundwater.

### Conversion of Water Access Entitlements

South Australia has completed the process for conversion of its water allocations from area to volumetric based in most of the prescribed water resource areas. The conversion of water entitlements in the South East Catchment remains

incomplete and South Australia expects the process to be completed by July 2007.

While this meets neither the 1994 COAG Water Reform Framework timeframe, nor the revised timetable outlined in the 2003 National Competition Policy assessment, South Australia has developed a timetable for completing licence conversion in the South East Natural Resource Management Region. The Commission expects that South Australia will ensure that it finalises the licence conversion process for this part of the state within this timeframe.

#### Licensing in Non-prescribed Areas

In relation to the prescription of only one type of water resource in a particular area, the Commission is concerned that there is a lack of integrated management of surface water and groundwater. It is recognised that in some areas there is not a high level of connectivity, and that South Australia does consider connectivity important in some places, like Mt Lofty and a part of the Flinders Ranges. However, the Commission is concerned that not all the areas that have important linkages between surface and groundwater, such as in the South East, are being managed in an appropriately integrated manner.

#### Compatible Entitlement Register

At the time of the 2004 National Competition Policy assessment, South Australia's system of water allocations and the register were found to be consistent with its COAG water reform obligations. The Commission notes South Australia's participation in the committee to develop nationally consistent registers for water access entitlements and trades by 2006.

#### Public Consultation and Education

South Australia has reported on the public consultation and education processes undertaken for the introduction of the new entitlement regime through the newly formed Natural Resource Management Boards, carried out during the development of natural resource management plans.

The public consultation and education activities carried out by South Australia through its existing Catchment Water Management Boards has provided the opportunity to the community for education and participation in the introduction of the new resource management process.

The consultation on entitlements and licensing has been carried out in prescribed areas where a licensing regime exists.

Overall, in view of not completing licence conversion in all prescribed areas, the Commission considers that South Australia has made significant progress towards its COAG commitments in this area.

## 6.2.2 Environmental and Other Public Benefit Outcomes

### Assessment Issues

The Commission is looking for the South Australian

Government to have commenced the process to incorporate the National Water Initiative architecture for the provision of water for environmental and other public benefit outcomes into its water entitlement, planning and management arrangements.

In South Australia, the *Natural Resources Management Act 2004* provides a statutory framework for the development of water allocation plans that specifically provide for water for environmental and public benefit outcomes in prescribed water resource areas.

Since the proclamation of the *Water Resources Act 1997*, statutory water allocation plans have been required for prescribed water resources. Water allocation plans were completed for 16 prescribed water resources in the period 2000–03, including four plans for surface water areas and 12 plans for groundwater areas. This equates to approximately 87 per cent of South Australia's total surface water resources and 88 per cent of South Australia's groundwater resources currently under prescription and covered by a water allocation plan. There is however, little consideration of how surface water relates to groundwater.

These plans have been developed by either the Catchment Water Management Board responsible for that resource or, where there is no board, by a water resources planning committee.

Most of these water allocation plans are currently under review and amendment. South Australia considers that future reviews of water allocation plans will ensure consistency with the National Water Initiative objectives.

South Australia has stated that the water needs of the environment must be taken into account in the preparation of a water allocation plan. The catchment and the requirements of the associated ecosystems are assessed before the consumptive pool is determined for a system.

Conditions may be imposed on water licences based on seasonality and other particular environmental requirements.

Water for environmental purposes can be provided in two ways:

- it can be provided as a water licence and associated water allocation that is specified as being for environmental purposes, or
- it can be held as part of the remaining water that is not specifically allocated for consumptive use, the environment, or any other purpose.

The determination of these entitlements is discussed further in Section 6.2.3 on Water Planning and Addressing Currently Overallocated and/ or Overused Systems.

Water allocation plans are developed to manage and protect both types of environmental water. Water in the consumptive pool that is not allocated for use is allocated for consumptive purposes only if it does not affect the water allowances for the environment, as specified in the relevant water allocation plan and the *Natural Resources Management Act 2004*.

South Australia has not demonstrated any management regime for water resources outside of those areas prescribed for water resource management. As such, it is unclear if there are processes in place for maintaining water for environmental and other public benefit outcomes in these areas.

## Discussion and Assessment

South Australia has demonstrated that it has a framework in place for providing water for environmental and other public benefits, through water allocation plans developed for prescribed water resource areas under the *Natural Resources Management Act 2004*.

The Commission notes that despite the small proportion of the state area that is prescribed for water resource management, prescribed areas account for a high percentage of the state's available water resources. For more discussion on this see Section 6.2.3 on Water Planning and Addressing Currently Overallocated and/ or Overused Systems.

South Australia does not manage water for environmental purposes, for either groundwater or surface water, in areas outside of prescribed water resource areas, due to the low level of both available resources and development in these areas.

The Commission is satisfied that South Australia has begun incorporating the National Water Initiative architecture for the provision of water for environmental and other public benefit outcomes into its water entitlement, planning and management regimes.

## 6.2.3 Water Planning and Addressing Currently Overallocated and/or Overused Systems

### Assessment Issues

In considering governments' arrangements for allocating water to the environment, in light of guidance provided by the 1994 COAG Water Reform Framework, the ARMCANZ/ ANZECC National Principles and the National Water Initiative, the Commission will expect the South Australian Government to establish arrangements that:

- are based on the best available science and use strategic and applied research (principles 2 and 11)
- achieve a balance between environmental needs and human use that provides the water needed to achieve the environmental outcomes, while recognising, in systems where there are existing users, the existing rights of those users (principles 1, 4, 5, 6 and 9)
- involve monitoring and adaptive management where the regular assessment of ecosystem health guides water management processes (principle 8), and
- involve stakeholder consultation and transparent processes that are robust, and ensure the timely provision of relevant information to all interested parties (principles 7 and 12).

The Commission is also looking for the South Australian Government to:

- demonstrate how its water management plans (and related arrangements) address the obligations in the 1994 Water Reform Framework and take account of the ARMCANZ/ANZECC national principles, regarding the provisions of water to the environment
- if the water allocated for environmental purposes for particular river and groundwater sources is significantly different from that recommended by the best available science, demonstrate that this decision is based on a robust examination of the socio-economic evidence and taken in the context of an open and transparent community consultation process that makes explicit the tradeoffs
- demonstrate that an integrated catchment management approach has been adopted for the management of water and that planning processes and administrative arrangements reflect an integrated approach to natural resource management
- demonstrate water allocations in all the river systems and groundwater basins identified in its 1999 implementation programme is substantially complete
- provide an overview of the public consultation and education processes in place and adopted for water planning and for addressing overallocated and/or stressed resources, and
- report on progress with the determination of overallocated and/or overused systems not covered by the 1999 implementation programme and the pathways being developed to address them.

#### Water Planning

The *Natural Resources Management Act 2004* provides the framework for a hierarchy of water management plans for water resources in South Australia. The *Natural Resources Management Act 2004* became operational on 1 July 2005 and replaces the *Water Resources Act 1997*. The Act provides a process for the management of useable water resources. This includes a range of tools, from moratoriums on increased water use, consulting with the community when potentially stressed and developing areas are identified, and ultimately the prescription of water resources.

The *State Water Plan 2000* has been the statutory, state-level strategic policy document under the *Water Resources Act 1997*. It will remain in effect under the new *Natural Resources Management Act 2004* until a statutory state natural resources management plan is developed to replace it. Consultation for the development of a *Draft State Natural Resources Management Plan* began in July 2005.

The *State Water Plan 2000* provides the policy framework for water resource management and sustainable use throughout South Australia, and outlines the broad principles for providing water for the environment (including rivers, lakes, wetlands, and riparian areas and the framework under which water allocations will be drawn up.

South Australia considers that the Water for Ecosystems policy, in conjunction with the *State Water Plan 2000*, has adopted the goal and the basic definitions and concepts of the ARMCANZ/ANZECC National Principles for the Provision of Water for Ecosystems. The policy has been implemented through catchment water management plans, water allocation plans and local water management plans for prescribed water resource management areas.

Under the *Natural Resources Management Act 2004*, natural resource management plans are to be developed for the eight catchment-management regions that cover all of South Australia. These plans will provide a management framework for strategic natural resource management outcomes, and look to facilitate sustainable growth and development in land, water, biodiversity and heritage assets. They will build on existing catchment water management plans that have been developed within the previous eight management plan areas that covered most of the state under the *Water Resources Act 1997*.

South Australia is currently undertaking a Stressed Water Resources Project, which aims to improve water resource management by developing a planning tool for identifying, prioritising and targeting of those systems at risk from overuse and exploitation. South Australia has not advised when this project is likely to be completed.

The process for water resource management in South Australia, under the *Water Resources Act 1997*, and continued under the new *Natural Resources Management Act 2004* implemented on 1 July 2005 is explained below.

When there is a high level of water use and the condition of an area's water resources is declining (as determined by an ongoing process for monitoring and assessment of South Australian water resources)—so that as such the system is overallocated—the South Australian Government carries out a process to declare the area:

- a prescribed water resource area or prescribed watercourse—to manage surface water, or
- a prescribed wells area—to manage groundwater.

Prescription is a means for managing water resources sustainably, and also for providing security to users and the environment.

Prescription initiates a process to address the issues of overallocation and overuse, seeking to establish a system for more sustainable sharing of the nominated resource and protect against the unregulated extraction of additional water. Water users are licensed to take a defined allocation of water, providing a level of clarity and certainty in relation to their access to water.

A decision to prescribe a resource is made on the basis of the environmental stress of the system and, after consulting with the community, it also considers the economic and social implications of prescription on the region.

Water resource development is allowed to continue up to sustainable limits through new allocations but, after that limit is reached, any new developments must acquire water through trading water rights. Furthermore, prescription provides protection to the environment and the water resource from overuse and degradation.

In prescribed areas, all water use requires a licence that specifies the volume that can be taken and any conditions on use or extraction. The only exception to this licence requirement is water used for stock and domestic purposes in prescribed areas outside of the River Murray Prescribed Watercourse, the Northern Adelaide Plains Prescribed Wells Area and the Far North Prescribed Wells Area (DWLBC, 2005a).

Under the old *Water Resources Act 1997*, once a resource was prescribed, a water allocation plan was developed to provide for the allocation, transfer and use of water. Water allocation plans are the main tool for allocating water to users and the environment in prescribed areas of South Australia. Water allocation plans have been developed by

Catchment Water Management Boards in prescribed areas within water management areas (and by Water Resource Planning Committees in prescribed areas that were historically outside of the then water management areas), and are required to be in line with the *State Water Plan 2000*. The plans also influence the conditions of access that are attached to water licences. A water allocation plan sets out criteria for making any unallocated water available, to provide for additional water use in the future if required.

Catchment water management plans are being developed by Catchment Water Management Boards for eight regions across South Australia, with six of them complete and two at a draft stage. These plans provide the management arrangements that complement the entitlement allocation regimes specified in the associated water allocation plans ([www.cwmb.sa.gov.au](http://www.cwmb.sa.gov.au)). Catchment water management plans are a requirement of Catchment Water Management Boards established under the old *Water Resources Act 1997*, and include management provisions for prescribed and non-prescribed water resource management areas.

Previously, any local government council within South Australia had the option to prepare a local water management plan for its shire under the *Water Resources Act 1997*. However, no plans were prepared by local councils and so the provision for local water management plans was not included in the *Natural Resources Management Act 2004*. Instead, councils have worked with the relevant Catchment Water Management Board to ensure that their requirements were addressed in their catchment water management plans.

All plans are required to be reviewed every five years.

#### Integrated Catchment Management

South Australia has developed an integrated approach to natural resources management, which includes the management and allocation of water, through the *Natural Resources Management Act 2004*. The Act:

- brings natural resources management into a framework of ecological sustainability and adopts the inter-generational equity and precautionary principles
- establishes a new structure which integrates a number of the previously separate natural resource management institutional arrangements



- repeals the *Animal and Plant Control (Agricultural Protection and Other Purposes) Act 1986*, the *Soil Conservation and Land Care Act 1989*, and the *Water Resources Act 1997*, and
- incorporates operational matters from the repealed Acts (with minor amendment for updating and consistency).

The *Natural Resources Management Act 2004* deals with land, water, biodiversity and pest species in an integrated manner. The prime object of this Act is to achieve ecologically sustainable development of natural resources. The Act 'objects' require the effects of decisions made in relation to one natural resource on other natural resources to be taken into account. It establishes a Natural Resources Management Council, eight regional Natural Resources Management Boards and other subregional natural resources management groups. The eight regional boards have defined regions that together cover the entire state of South Australia.

The *Natural Resources Management Act 2004* establishes a planning hierarchy with a State Natural Resources Management Plan to provide the strategic framework within which the state government and regional Natural Resources Management Boards will operate.

The new Natural Resources Management Boards have direct responsibilities for integrating planning and decision-making in relation to a wide range of issues, including water resource management, soil conservation and land care, and animal and plant control. They also have the scope to deal with other natural resources management issues, such as coastal management and biodiversity management, in accordance with the goals of their respective regional natural resources management plans, the State Natural Resources Management Plan, and the 'objects' of the Act.

#### Provisions for the Environment

Water for environmental purposes is assessed and specified through the development of a water allocation plan in areas prescribed for water resource management. An expert technical advisory panel for environmental flows is formed to assess the ecosystem water needs in a prescribed area and determine their dependence on different types of flow characteristics. This panel determines a flow regime and estimates a minimum flow requirement for the purpose of

providing water for the environment. The determinations of the panel inform decisions for the development of water allocation plans. South Australia states that the material used for technical studies is available to the public and is presented to the public during the consultation part of the planning process.

Water allocation plans provide rules for licensing consumptive use (for surface water, groundwater and overland flow) and limiting extractions from the system. The water resources that are protected from extraction are for the environment.

Water for environmental purposes, as specified in water allocation plans, can be provided in two ways. It is usually held as part of the remaining unallocated water in a consumptive pool (not specifically allocated for consumptive use, the environment or any other purpose), or be provided as a water licence and associated water allocation (similar to those for consumptive use) specified as being for environmental purposes.

The volumes specified under a water licence for the environment are not in addition to the flows protected from consumptive use, but form part of it. Water licences for the environment can be allocated to particular locations or to particular environmental benefits, such as for wetlands.

#### Water Allocation Plans

South Australia identified 15 water sources as stressed (mostly groundwater) in its 1999 implementation programme.

Since the 1999 implementation programme, South Australia has subsequently identified six additional water systems that it considered as stressed. It has commenced the water allocation planning process for these areas, one of which has been completed.

South Australia has completed water allocation plans for all 15 of the prescribed water resource areas. Most of these water allocation plans are currently under review and amendment.

An update in each system identified as requiring water resource planning in 1999 and in following years is provided below. These systems are sorted into groups, namely those systems:

- looked at in detail in previous National Competition Policy assessments
- looked at in detail for the first time in this National Competition Policy assessment
- prioritised in the 1999 implementation programme, and
- prioritised since the 1999 implementation programme.

For the purposes of assessing South Australia's approach to incorporating the 1994 COAG Water Reform Framework and the ARMCANZ/ANZECC National Principles for the Provision of Water for Ecosystems into its management arrangements, the Clare Valley Prescribed Water Resources Area and the River Murray Prescribed Watercourse area were looked at in detail for the 2005 National Competition Policy assessment. These systems were selected as key areas for demonstrating South Australia's water management planning processes. The Commission examined water planning for these systems based on publicly available information in order to test the transparency of South Australia's processes and outcomes.

#### Previous National Competition Policy Assessment

##### *Tintinara Coonalpyn Water Allocation Plan<sup>2</sup>*

The water allocation plan for the Tintinara Prescribed Wells Area was adopted on 22 January 2003 (South Australian Government, 2003). It sets Permissible Annual Volumes for seven management areas. The plan does not provide a volumetric allocation for the environment, but at the time of the 2003 National Competition Policy assessment, it was expected that the management arrangements of the water resource should meet the minimum requirements of dependent ecosystems. A paucity of data in the area means the sufficiency of the water allocation plan is uncertain and may not be meeting environmental requirements. The plan contains provisions for monitoring and adjusting the plan as better information is obtained.

The National Competition Council flagged concerns over the lack of a specific entitlement for the environment and lack of accurate data to inform whether the minimum environmental requirements are being met, under the assumption that the water allocation plan could be amended in the future.

<sup>2</sup> The Tintinara Coonalpyn system was identified as stressed after the development of South Australia's 1999 implementation programme.

At the time of this 2005 National Competition Policy assessment, South Australia is developing a management plan that covers both land and water for the Tintinara Coonalpyn Prescribed Wells Area. A review of the Tintinara Coonalpyn Water Allocation Plan is not expected to be completed until early 2008.

#### 2005 National Competition Policy Assessment

##### *Clare Valley Water Allocation Plan*

The Clare Valley Water Allocation Plan was adopted on 22 December 2000 and contains both a technical description of the water needs for aquatic ecosystems and the rules for water allocation (South Australian Government, 2000a). The plan covers the Clare Valley Prescribed Water Resources Area, which is at the saddle between the Broughton River, flowing into Spencer Gulf, and the Wakefield River, flowing into Gulf of St Vincent. The Clare Valley Prescribed Water Resources Area is identified as being at the limit of sustainable extraction at present, with the implication that aquatic ecosystems are under stress.

The water allocation plan is aimed at integrating management of groundwater and surface water, and covers a broad field of concerns, including overland flow. It makes provision for the use of water from inter-basin transfers and artificial groundwater recharge.

The water allocation plan describes ecosystem water needs in terms of floodplains, riparian zone, in-stream, and coastal wetlands/ estuaries. Each river is divided into geomorphic zones, for which existing data were collected on invertebrates, fish, amphibians and vegetation. A multidisciplinary scientific panel assessed the dependence of these groups on seven different flow-bands – baseflow, freshets, habitat connection flow, migration flow, mid flow, high flow and floodplain flows. Putting these ecological flow requirements together (a bottom-up approach) produced information on the frequency and duration of the seven flow bands to meet them.

The description of environmental water requirements is qualitative and generalised. The environmental flow needs are expressed very simplistically (no spatial differentiation, continuous flows developed in an ephemeral system etc) and the plan does not seem to quantify them in a way that can be used to assess clearly whether the water needs

of the system are met or not. In relation to this, there is a lack of transparency on how certain conclusions are made. Furthermore, the rules and threshold for taking water are not linked to the protection of environmental values, other than in the most general way, and do not maintain flows at a level established as necessary for ecosystem protection. Also, given that low flows in the rivers are almost entirely baseflow driven (i.e. groundwater), it is not clear how the allocation rules that are based on catchment yield, will protect low flows.

The rules in the plan cover water allocations for all types of water sources, and include some innovative aspects. There are rules about the retaking of artificial groundwater recharge water and an effort to integrate surface and groundwater management including run-off management. The plan deals with issuing permits for dams and diversions, providing a framework for how permits are to be issued across the whole plan area (not location specific) on an annual basis.

The Water Allocation Plan details the additional rules governing the allocation of imported water (primarily from the Murray River). It is clear that these additional rules are focused on ensuring that the inter-basin transfers do not cause additional harm to the aquatic environment of the prescribed area. See Section 6.4.4 on Release of Unallocated Water for a discussion of the transfer of River Murray water into the Clare Valley and rules relating to salt loads. There is no clear principle or objective, however, to ensure that water imported into the Clare Valley catchment is used to remediate environmental values that have declined as a result of the current heavy water usage regime.

In general, the substantial assessment of ecological water needs undertaken by the Department of Water, Land and Biodiversity Conservation and the multidisciplinary scientific panel is not well documented publicly and is therefore difficult to assess. The result is that the lack of transparency does not do justice to the framework that has been established by South Australia or the progress that has been made in developing the Clare Valley Water Allocation Plan.

The plan does not transparently explain any trade-offs between consumptive use and environmental use. It may be the case that the rules in place are adequate for protecting environmental values, however environmental water

requirements are never stated in quantitative terms and it is not clear how the environmental values are being protected.

There are numerous amendments that are being proposed for the Clare Valley Water Allocation Plan in its five year review, scheduled for completion by February 2006, which will substantially alter its content. These proposed amendments will need to undergo a community consultation process as stipulated in the Act. Currently there are a number of consultancies that are being undertaken on behalf of the Northern and Yorke Natural Resources Management Board as part of the process of reviewing and amending the Clare Valley Water Allocation Plan, including data collection, additional environmental and hydrologic studies, and the conversion of licences from area based to volumetric entitlements.

#### *River Murray Water Allocation Plan*

The Water Allocation Plan for the South Australian part of the River Murray was adopted on 1 July 2002 (South Australia Government, 2002). It is the central plan defining the water allocation rules for the River Murray (South Australia). The plan makes it clear that one of its central objectives is to maintain, and where possible, improve the ecosystems of the prescribed area.

In its environmental water provisions, the Water Allocation Plan is almost entirely focused on the lakes and wetlands of the prescribed area, particularly the three ecological assets of the Lower Lakes and Coorong; the Chowilla wetlands; and the River Murray channel. There is little attention given in the water allocation plan to in-channel environmental needs such as fish, amphibians and invertebrates.

The water allocation plan provides reasonable detail of the hydrologic targets to be sought in the waterways of the area, including the River Murray channel, to maintain ecosystem health.

The water allocation plan caps not only the total volume that can be taken from the River Murray but also the volumes allocated to specific locations, including for irrigation, stock and domestic, Adelaide urban water supply augmentation, and various environmental purposes. The purposes to which water for wetland management is allowed to be used are specified and appear to be reasonable.

The Lower Murray Environmental Flows Technical Advisory Panel recommended a flow regime that was adopted in the plan. However, this target remains far above the entitlement flows, current median flows, and the increase expected under the Living Murray Initiative.

A portion of the entitlement flows is identified for wetlands under the water allocation plan. These allocations are licensed in the same way as for consumptive uses, although are not tradeable. The licence is expected to be held by a voluntary community group without legal standing, representing the wetland.

These and other allocation provisions all appear reasonable and will help maintain the river wetlands. There are numerous studies, some on-going, into the environmental water needs of the wetlands and riparian areas within the River Murray Prescribed Watercourse area. However, it is not clear how these studies were brought together and synthesised to provide the best available science on which the plan states that it is based.

There are a number of plans and strategies that influence the management of water resources in the South Australian part of the River Murray. The River Murray Catchment Management Strategy, written by the River Murray Catchment Water Management Board in 2003, is an overarching document that provides a strategic plan for all the Board's water plans. It identifies the goals, principles, and strategies to improve the flows and quality of water in the area under the Board's jurisdiction (RMCWMB, 2003). The River Murray Prescribed Watercourse Area, dealing just with the River Murray corridor and some associated areas, falls within the Board's jurisdiction along with three groundwater management Prescribed Areas. The Strategy covers a range of land and water management issues, not just environmental flows. In particular, it describes the method by which a flow management plan will be developed for the River Murray Prescribed Area, including the use of best available science.

In addition, the document *Environmental Flows for the River Murray* (DWLBC, 2005b), published in 2005, lies under the River Murray Catchment Management Strategy. It is focused just on the issue of environmental flows and summarises the various activities and plans under way to improve environmental flows in the South Australian part of the River Murray.

The five year review of the River Murray Water Allocation Plan is scheduled to be completed by July 2007.

#### 1999 Implementation Programme Priority *Northern Adelaide Plains Water Allocation Plan*

The water allocation plan for this area was adopted on 22 December 2000 (South Australia Government, 2000b).

Despite the existence of a water allocation plan, it is recognised that the Northern Adelaide Plains Prescribed Wells Area is currently overallocated. The water allocation plan is being amended with completion expected towards the end of 2005 or early 2006.

Under the National Action Plan for Salinity and Water Quality, the use of water from the Bolivar Wastewater Treatment Plant is being considered as a means of restoring the equilibrium of the aquifer.

#### *Padthaway Water Allocation Plan*

The water allocation plan for this area was adopted on 29 June 2001 (South Australia Government, 2001).

Despite the existence of a water allocation plan, it is recognised that the Padthaway Prescribed Wells Area is currently overallocated. The water allocation plan is being amended with completion expected towards the end of 2005 or early 2006.

*General*

In addition to the water allocation plans mentioned above, the remaining areas identified as a priority in South Australia's 1999 implementation programme have had a water allocation plan adopted and scheduled for review, in accordance with the timetable in Table 6.1 below:

Table 6.1 – Schedule for additional 1999 implementation programme priority Water Allocation Plan adoption and review.		
Water Allocation Plan	Status of Plan	Deadline for review
McLaren Vale	Adopted on 6 November 2000	November 2005
Mallee	Adopted on 21 December 2000	December 2005
Barossa	Adopted on 22 December 2000	December 2005
Southern Basins	Adopted on 31 December 2000	December 2005
Angas Bremer	Adopted on 2 January 2001	January 2006
Noora	Adopted on 2 January 2001	January 2006
Musgrave	Adopted on 2 January 2001	January 2006
Comaum-Caroline	Adopted on 29 June 2001	June 2006
Tatiara	Adopted on 29 June 2001	June 2006
Lacepede Kongorong	Adopted on 29 June 2001	June 2006

## Post 1999 Implementation Programme Priority

*Eastern Mount Lofty Ranges Water Allocation Plan*

The Eastern Mount Lofty Ranges area has been identified as a catchment using more than the licensed diversion limits. Notice of intention to prescribe the Eastern Mount Lofty Ranges groundwater and surface water resources for resource assessment was released on 8 September 2005.

South Australia expects that the Eastern Mount Lofty area will be prescribed by October 2008 and that the water assessment to determine the licensing arrangements for the area will be completed by October 2009.

*Far North Wells Water Allocation Plan*

The groundwater resources in the Far North area have been identified as requiring protection and as such, a water allocation planning process has been initiated in the area.

The Far North Prescribed Wells Area has been announced and a water allocation plan is due to be finalised in December 2005.

*Lower Limestone Water Allocation Plan*

The Lower Limestone Coast Prescribed Wells Area was formed in late 2004 from the amalgamation of the Comaum-Caroline, Lacepede Kongorong and Naracoorte Ranges Prescribed Wells Areas. Individual water allocation plans for

the three areas were adopted on 29 June 2001, and a review of these began in June 2004.

A single water allocation plan is expected to be released as a draft for comment in 2006, to replace the other three.

*Marne-Saunders Water Allocation Plan*

The Marne-Saunders area has been identified as having stressed surface water resources and is undergoing the water allocation planning process.

The Marne-Saunders Prescribed Water Resources Area has been announced and a water allocation plan is due to be finalised in March 2006.

*Morambro Creek Water Allocation Plan*

The Morambro Creek area has been identified as a stressed watercourse and as having stressed surface water resources. As such it is undergoing the water allocation planning

process.

The Morambro Creek Prescribed Water Resources Area and the Morambro Creek Prescribed Watercourse Area were announced and a water allocation plan was due to be finalised in October 2005. South Australia has not demonstrated that this plan has been completed, or provided a revised completion date.

*Western Mount Lofty Ranges Water Allocation Plan*

The Western Mount Lofty Ranges area has been identified as a catchment using more than the licensed diversion limits. Notice of intention to prescribe the Western Mount Lofty Ranges groundwater and surface water resources for resource assessment was released on 14 October 2004.

South Australia expects that the Western Mount Lofty area will be prescribed by October 2008 and the water assessment to determine the licensing arrangements for the area will be completed by October 2009.

All Water Allocation Plans prepared for prescribed areas include monitoring regimes that build on existing monitoring arrangements and that are in line with the policies in the *State Water Plan 2000*. Under the state plan, planning processes allow for environmental water provisions to be adapted on the basis of monitoring and improved knowledge.

### Public Consultation and Education

A statewide Natural Resource Management Council and eight regional Natural Resource Management Boards have been formed, under the *Natural Resources Management Act 2004*, to coordinate the management of natural resources within South Australia. These boards and the council plan to build on the work carried out by Catchment Water Management Boards that already exist across the state.

Under the *Natural Resources Management Act 2004*, South Australia is required to undertake one public meeting to consult on the development of a natural resource management plan under the new water planning system.

To date, the Catchment Water Management Boards have been responsible for consultation and education of the community and stakeholder groups. These boards have ensured community involvement in the development of water allocation plans to deal with overallocation and overuse in prescribed water resource areas.

There are eight Catchment Water Management Boards in South Australia, covering the regions of the Murray River; Patawalinga; South East; Onkaparinga; Eyre Peninsula; Torrens; Arid Areas; and Northern Adelaide and Barossa.

Catchment Water Management Boards each have their own websites and conduct public meetings on natural resource management issues in their region. They coordinate the formation of reference groups that, as representatives of the community and stakeholder groups, examine issues and options relating to water allocation plans. The boards are a central point for information such as the various technical assessments undertaken prior to the prescription of a water resource.

Furthermore, the Department of Water, Land and Biodiversity Conservation has developed a range of fact sheets that provide information on various topics that relate to water resource prescription and the water allocation planning process.

### Discussion and Assessment

South Australia has stated that the ARMCANZ/ANZECC National Principles for the Provision of Water for Ecosystems have been used in formulating many of the fundamental policy approaches to this issue in South Australia.

The *Natural Resources Management Act 2004* provides for the recognition of river regulation and consumptive use as potentially impacting on ecological values. The prescription process and the associated water allocation plans include provisions for meeting the water regime necessary to sustain ecological values of aquatic ecosystems whilst recognising the existing rights of other water users, and further allocation of water for any use on the basis that ecological processes and values are sustained.

Accountabilities in all aspects of management of environmental water appear transparent and clearly defined. As at 1 January 2006, the Catchment Water Management Boards are currently responsible for the day-to-day management of environmental water provisions, and will be replaced by the Natural Resources Management Boards under the new legislation. The licensing arrangements are managed through the Department of Water, Land and Biodiversity Conservation within a policy framework recommended initially by the statutory Catchment Water Management Boards (now Natural Resource Management Boards), and approved by the Minister for Environment and Conservation.

Monitoring regimes under the South Australian planning process provide information on the adequacy of environmental water and, along with various research projects, provides for an adaptive management framework.

### Water Planning

The Commission is satisfied that the arrangements for water management in South Australia are consistent with COAG commitments and have legislative backing.

### Integrated Catchment Management

South Australia has repealed various Acts that provided a management framework for different natural resources within the state, and replaced them with one Act, the *Natural Resources Management Act 2004*. This Act provides the integrated management of natural resources across catchments, including for water resources.

The existing Catchment Water Management Boards, and the Natural Resources Management Boards being developed, are responsible for managing the natural resources within South Australia, and provide a central point where all issues of

resource management can be addressed, in consideration of other catchment issues.

The Commission is satisfied that South Australia has adopted an integrated catchment management approach for water resources, which is reflected through its water planning processes and administrative arrangements. These arrangements are still being bedded down in practice and the Commission will continue to monitor progress.

#### Provisions for the Environment

Water allocation plans provide water for environmental purposes, in areas with prescribed water resources, by either limiting licensed extractions or by providing a specific environmental water allocation, or by a combination of both methods.

The amount of water to be reserved for the environment is determined through technical assessments and by an expert panel. Although it is considered that South Australia has used the best available science in its water planning process, the Commission notes that not all of the technical assessments used to determine the environmental requirements of a system are identified and made publicly available.

#### Water Allocation Plans

South Australia has completed water allocation plans for all 15 of the prescribed water resource areas covered by its 1999 implementation programme.

For the 2004 National Competition Policy assessment, South Australia was found to be continuing to progress its water reform processes in a manner consistent with its 1994 COAG water reform obligations. For the 2005 assessment, South Australia has moved forward with its stressed rivers review and complementary state water monitoring review to the point where these projects appear to be close to completion. Furthermore, South Australia is continuing to identify additional water systems that are stressed, and develop plans to provide water for the environment and to manage water allocations in a sustainable way.

The Commission considers that South Australia has demonstrated satisfactory progress in addressing systems that are stressed from overallocation and overuse.

In relation to the science used to underpin the water

allocation plans, using the Clare Valley system as an example, the assessment of ecological water needs is based on acceptable principles—whole of water regime; geomorphologically distinct river reaches; instream, overbank and estuarine needs; and different biotic groups (albeit somewhat limited). The expert panel assessment of these needs may well have used best available information but, like most expert panel approaches, appears to be poorly documented and is difficult to assess, at least from the information in the water allocation plan. After establishing this acceptable framework, the output from the panel appears to be simplistic and does not do justice to the framework established. The Commission considers that the establishment of environmental water needs starts well, establishes a good framework, but could be improved in terms of the planning rules developed.

The Clare Valley Water Allocation Plan does not clearly state the trade-offs between water allocations for consumptive uses and environmental uses. This is largely because the environmental water requirements are never stated in quantitative terms. Nevertheless, the rules may well be sensible for protecting environmental values (although they lack spatial differentiation, seasonality and inter-annual variation) but the precise relationship between the rules and protection of the values is unclear.

Integrated natural resource management plans (that build on the catchment water management plans developed under the old system) are required to be prepared for all aspects of water resources management in each of South Australia's catchment areas. Although these plans do not delve into the specifics of water allocation, they include a broad range of issues such as water quality, overland flow, and groundwater management; they effectively provide a framework within which water allocation plans are to be produced.

Using the Clare Valley and the River Murray water allocation plans as examples of water resource planning processes in South Australia, the Commission is satisfied that South Australia has used the best available science in its water planning processes and in the development of its water allocation plans. In summary, the Commission has some concerns over the resulting flow regime requirements, the lack of transparency of the trade-offs between consumptive

users and the environment, and the lack of clarity when determining environmental water requirements, particularly in the Clare Valley.

#### Public Consultation and Education

Although not specifically reported by South Australia for this 2005 National Competition Policy assessment, the Commission understands that South Australia has developed a framework for providing public consultation and education through the eight existing Catchment Water Management Boards.

The current Catchment Water Management Boards, being replaced by Natural Resource Management Boards under the new *Natural Resources Management Act 2004*, are responsible for liaising with the community and stakeholder groups both before the decision to prescribe an area is made, and also during the development of a water allocation plan. These boards ensure that social and economic issues are addressed in the prescription and water planning processes.

The Commission considers that the Catchment Water Management Boards have provided thorough public consultation and education for water planning and addressing overallocated and/or overused water resources in South Australia.

### 6.2.4 Assigning Risks for Changes in Allocation

#### Assessment Issues

The Commission expects South Australia to demonstrate that it has a process and timetable in place to integrate the risk assignment framework into its legislative and administrative water entitlement and planning regimes, and to have applied the framework for any changes in allocations that have not been provided for in its current water plan overallocation pathways.

Under the *Water Resources Act 1997*, and now under the *Natural Resources Management Act 2004*, allocations may be reduced where necessary to protect the sustainability of the resource or water dependent ecosystems. The South Australian Government has stated that a water allocation attached to a water licence may be reduced if:

- it is necessary to prevent a reduction in water quality or to prevent damage to an ecosystem
- there is insufficient water to meet existing or expected future demands, or
- there is a reduction in the quantity of water available under intergovernmental agreements covering the Murray-Darling Basin or groundwater.

The *Natural Resources Management Act 2004* does not provide for compensation in the event that a water allocation is reduced, but decisions can be appealed.

In McLaren Vale, a reduction in allocations was addressed by negotiating varied allocations without compensation. South Australia considers that this approach was effective, and as such, will be pursued in other areas where overallocation is an issue and no other solution is available or appropriate.

South Australia is required to review its existing water allocation plans every five years under the *Natural Resources Management Act 2004*. The current round of reviews is due for completion in 2010. South Australia has stated that future reviews will incorporate a risk assignment framework for over-allocated resources in accordance with this schedule.

South Australia is yet to decide whether to adopt the risk assignment framework outlined in the National Water Initiative by 2014 or adopt an alternative approach. The discussion will be made after the plans have been reviewed and any new information that may result from the review process is considered.

#### Discussion and Assessment

South Australia has in place provisions for reducing allocations where necessary, without compensation.

Although the provisions within the *Natural Resources Management Act 2004* and its proposed review may be able to encompass some aspects of the National Water Initiative risk assignment framework, South Australia has not yet demonstrated a commitment to integrating the framework into its legislative and administrative regimes.

South Australia has a general timetable for addressing risk in existing water allocation plans, but without any



demonstration of the details of how the framework will be incorporated. As such, it is not clear whether South Australia intends to fully integrate the National Water Initiative Risk Assignment Framework into its legislative and administrative water entitlement and planning regimes by 2014, or to develop a framework of its own.

Overall, the Commission considers that for the purpose of this assessment, South Australia has not demonstrated satisfactory progress on its COAG commitment in this area.

### 6.2.5 Indigenous Access

#### Assessment Issues

The Commission is looking for South Australia to show that it has in place arrangements for the incorporation of Indigenous water issues into water planning processes, including the recognition of the possible existence of native title rights to water.

South Australia states that it considers Indigenous heritage, and the interests of the traditional owners of any land and other natural resources in the development and review of water allocation plans, under provisions in the *Natural Resources Management Act 2004*. This consideration is provided through the 'objects' of the Act.

The *Natural Resources Management Act 2004* requires a Natural Resource Management Council to be formed for the purpose of overseeing the integration of resource management across South Australia. One member of this council is required to be nominated after the minister has consulted with bodies that the minister considers to be suitable to represent the interests of Indigenous people, for the purposes of the Act. Furthermore, regional Natural Resource Management Boards must contain members who have skills and experience with Indigenous interests in water and Indigenous heritage.

A further provision of the *Natural Resources Management Act 2004* states that 'nothing done under this Act will be taken to affect native title in any land or water' (Clause 207).

In addition, in February 2005 South Australia established the Aboriginal Statewide Advisory Committee to advise on Indigenous issues. The committee is to advise the Natural Resource Management Council on current Indigenous engagement mechanisms in different regions—including

for water resource management—and to facilitate the development of mechanisms to encourage Indigenous engagement by natural resource management bodies.

In South Australia, Indigenous Land Use Agreements have been used in relation to land access and for a range of other purposes. It is likely a similar approach may be adopted for Indigenous access to water resources, especially in view of Indigenous practices that integrate management of land, water and cultural practices.

The review of the Far North Prescribed Wells Area involved considerable consultation with Indigenous groups; the proposed prescription of the Mount Lofty Ranges (in process) involves consultation with Indigenous groups.

#### Discussion and Assessment

Although South Australia has stated that it considers cultural values in the development of Water Allocations Plans, there was no demonstration of this in the Plans reviewed by the National Water Commission as part of this assessment, as the plans do not directly address these issues. There is also scope to include Indigenous water access rights as an issue to be addressed by a plan.

The water planning process provided for under the *Natural Resources Management Act 2004* is obliged to not interfere with native title rights to water. This recognises the possible existence of current native title rights to water, and allows for reviews of water allocation plans to incorporate any new claims in the future.

The Commission is of the view that considerable progress has been made with the formation of the Aboriginal Statewide Advisory Committee, and will continue to monitor South Australia to ensure that it incorporates Indigenous water access issues into its planning process.

The Commission considers that South Australia has made good progress towards meeting its COAG commitments in this area.

## 6.2.6 Interception

### Assessment Issues

The Commission will look for South Australia to provide information on the steps being taken to implement water interception measures detailed in the National Water Initiative, including any application of the National Water Initiative provisions to recent activities.

Issues relating to interception have been a problem in South Australia for some time and South Australia has stated that a number of steps have been taken to address the situation.

Existing dams are considered in the preparation of water allocation plans for areas with prescribed surface water resources. For example, the plans contain policies to manage these activities through water allocation, a water affecting activity permit, or the activities are managed through development approval. Likewise, bores are considered in the preparation of water allocation plans for areas with prescribed groundwater wells areas.

The *Natural Resource Management Act 2004* also provides other mechanisms to manage significant interception of water, generally as water affecting activities requiring a permit issued in accordance with a policy developed for the proper management of that activity.

Principles and guidelines for surface and watercourse waters interception are provided for in the State Water Allocation Plan 2002, which are in line with the National Water Initiative.

Regulations have already classified interception by plantation forestry as a 'water affecting activity' in the lower south east areas of the state, requiring forestry organisations to hold a permit for their activity. While existing forestry development does not need an allocation for the water intercepted, South Australia anticipates that in some fully allocated management areas, proponents of new forest plantations may be required to secure an entitlement to offset the reduced recharge to groundwater systems expected.

South Australia is of the view that further consideration is required, both of the potential need to investigate such activities and also the need to amend existing planning systems to account for landuse change impacts on water resources.

The first steps have been taken to prescribe water resources in the Eastern Mount Lofty Ranges, and; the applicable water allocation plans provide for forestry thresholds in the area. In the Western Mount Lofty Ranges, water allocation plans are being developed and South Australia has stated that forestry thresholds are expected to be similarly determined during the development of these plans.

### Discussion and Assessment

Interception activities (including farm dams) that exist in regions that are covered by a prescribed water resource management area are considered in the development of water allocation plans. It is unclear, however, the extent to which development of new interception activities is regulated or managed as required by the National Water Initiative.

Plantation forestry organisations in the lower south east of the state are required to hold a permit for their operations. Water allocation plans in the Eastern Mount Lofty Ranges have placed a limit on the amount of land to be used for plantation forestry, and it is expected that draft plans in the Western Mount Lofty Ranges will do the same.

The Commission considers this a good step towards managing the impact of landuse change on water interception.

For the purpose of this assessment, the Commission considers that South Australia has met its COAG commitment in this area and will continue to monitor progress towards implementing water interception measures in accordance with South Australia's National Water Initiative commitments.

## 6.3 Water Markets and Trading

### Assessment Issues

Trading arrangements in water entitlements are to be instituted to maximise water's contribution to national income and welfare, where systems are physically connected or hydrologic connection and water supply considerations permit trading. Under the 1994 Water Reform Framework, trading arrangements were to be finalised by 2005. The National Water Initiative expands and re-defines the 1994 water reform commitments.

Consistent with its National Water Initiative commitments, the Commission expects South Australia to:

- have removed remaining institutional barriers to temporary trade
- by June 2005, have reduced barriers to permanent trade by taking the necessary legislative and other actions to permit open trade and ensure competitive neutrality
- by June 2005, have taken all necessary steps to enable exchange rates and/or tagging of water access entitlements and establish an interim annual threshold limit of four per cent on permanent trade out of water irrigation areas
- demonstrate trading rules in existing water management plans facilitate trading consistent with the actions and outcomes of the National Water Initiative and demonstrate a process is in place to incorporate trading rules consistent with the National Water Initiative into new water plans
- have pathways in place by the end of 2004, leading to the full implementation by the end of 2006, of compatible, publicly-accessible and reliable water registers of all water access entitlements and trades, and
- be developing arrangements for permanent interstate trading beyond the MDBC pilot project.

#### Trading Arrangements

South Australia has an active intrastate trading market in surface water and groundwater licences (access entitlements) and allocations. Trading occurs in irrigation schemes and in areas where water licences have been issued.

In South Australia, the water access entitlement is expressed as a water licence that specifies the right to take water. One or more water allocations are attached to a licence, and they specify the annual volume of water that can be taken (a water taking allocation) or held (a water holding allocation) under the licence. Water holding allocations can be held by a licence holder, but must be converted to a water taking allocation before they can be used (subject to the relevant site use approvals).

Currently, the *Natural Resource Management Act 2004* provides for water trading of water licences and allocations. The *Irrigation Act 1994* provides for the transfer of water

allocations within irrigation trusts (irrigation supply districts) and the *Renmark Irrigation Trust Act 1936* (for the Renmark Irrigation Trust specifically).

Under the *Natural Resource Management Act 2004*, a water licence (including its water allocation) may be permanently or temporarily transferred to another party. All (or part) of a water allocation of a licence may also be permanently or temporarily transferred.

Within an irrigation area, the relevant irrigation trust generally holds the licence (and the attached water allocation). A trust may temporarily or permanently trade all or part of its surplus allocation (the allocation held by the trust in excess of the sum of entitlements held by its individual irrigators) to another party outside the trust. As of 1 July 2005, the two largest irrigation trusts (Central Irrigation Trust and Renmark Irrigation Trust) had voluntarily raised the level of licensed water allocations that can be permanently traded out of the trust's area to four per cent of the total allocation<sup>3</sup>.

South Australia is currently reviewing the *Irrigation Act 1994* and the *Renmark Irrigation Trust Act 1936*. Arrangements for trade out of the remaining irrigation trusts will be incorporated into the review. South Australia does not consider the remaining trusts large enough to present a significant barrier to trade (pending completion of the review).

The South Australian *Natural Resources Management Act 2004* provides for both permanent and temporary interstate water trade through defined Interstate Water Entitlement Trade Schemes. South Australia actively participates in the Murray-Darling Basin Commission pilot project for permanent interstate trade (refer Murray-Darling Basin Commission Chapter 10). Under the *Natural Resources Management Act 2004*, this project is currently the only approved Interstate Water Entitlement Trade Scheme. Under the National Water Initiative, South Australia has agreed to the use of water access entitlement exchange rates and/or water access entitlement tagging to facilitate intrastate and interstate trade. Use of exchange rates is legislatively feasible in South Australia.

<sup>3</sup> A two per cent limit was previously applied by the Central Irrigation Trust. Renmark Irrigation Trust did not previously permit permanent trade out.

Negotiations between South Australia, Victoria and New South Wales to develop appropriate arrangements for permanent interstate trade is continuing. At the time of drafting this report, South Australia and Victoria were close to finalising an agreement to allow for trade between those two states using exchange rates.

Water access entitlement tagging is not currently possible in South Australia. Water use approvals are specified on the water licence; hence a trade of a tagged licence (where the traded licence retains its original characteristics) is not possible. A change to the licence for the water to be used elsewhere would be required.

South Australia strongly supports expanded interstate trade utilising an exchange rate based trading system. South Australia advises that it is prepared to explore the feasibility of introducing a tagged water trading regime. Such a regime is at least two years away because of the need to develop the necessary legislative and administrative arrangements.

Under the *Natural Resources Management Act 2004*, arrangements for interstate trade are also subject to the provisions of the 1992 Murray-Darling Basin Agreement. South Australia, Victoria and New South Wales (and the Commonwealth) are currently reviewing the relevant parts of the agreement to permit expanded interstate trade. South Australia is an active participant in the COAG Water Trading Group, coordinated by the Department of the Prime Minister and Cabinet, which is overseeing the implementation of the opening up in permanent trade in water entitlements in the southern Murray-Darling Basin. The group is also overseeing the trading studies to be conducted under the National Water Initiative.

#### Trading Rules and Approvals

South Australia's trading arrangements are developed to be consistent with the overarching principle that water can be traded only within the physical and environmental constraints of the water system. The water transfer criteria (trading rules) to give effect to this principle are identified in the relevant water allocation plan. The water transfer criteria set out the objectives and principles for the transfer of a licence or allocation in the relevant prescribed area. Water transfer criteria, for both surface and groundwater sources, appear to be used to protect the environment and existing

users. They are also used for the practical management of trade. Under the National Water Initiative, South Australia is to ensure its water trading rules—under existing and new water allocation plans—are consistent with the National Water Initiative Principles for Trading Rules. South Australia advises that the water transfer criteria in current water allocation plans will be reviewed for consistency with the National Water Initiative as the plans are reviewed through their five yearly review cycle.

South Australia applies a 20 per cent reduction factor<sup>4</sup> to water allocations traded (permanently or temporarily) in the Northern Adelaide Plains Prescribed Wells Area, as a precautionary measure to reduce the demand for groundwater, while sustainable extraction limits are better defined. South Australia advises that, over the five years since the introduction of the 20 per cent reduction factor, 90 megalitres of allocation has been permanently recovered by the government. This has brought a reduction in overall total use, reducing stress on the aquifer. South Australia advises that this measure has been of moderate success, and that it is currently working to develop more effective options to manage sustainable resource extractions.

Applicants who wish to transfer water to effect a water trade must apply to the Department of Water, Land and Biodiversity Conservation to have the transfer proposal assessed in accordance with the trading rules of the relevant water allocation plan. All parties with a registered interest in the licence must be notified before a trade can be approved.

The time taken for a trade approval varies considerably in South Australia. This is largely due to the arrangements for landuse approval in the state. Trades in water holding allocations usually occur quickly, since no site use approval is required to hold an allocation. Permanent trades in licences with a taking allocation attached, or in the taking allocation itself, often require detailed and lengthy site assessment; this is often because of salinity concerns.

<sup>4</sup> This reduction factor means that volume of water acquired by the buyer is 20 per cent less than the volume sold.

### Entitlement Registers

South Australia has developed a water licence register that records third-party interests in water licences. The register forms part of the state's Water Information and Licensing Management Application (which also handles the issuing of water licences and collection of fees and charges). South Australia is also actively engaged in a national process to determine common characteristics to be applied to registry systems to achieve national compatibility.

### Submissions

In its submission, the World Wildlife Fund Australia (WWF-Australia) comments that the environmental impacts of transferring water need to be fully understood prior to allowing water to be traded. Water trading resulting in a negative impact on the environment, either through instream impacts or on-ground use, should not be allowed. Where these impacts are not fully understood, a precautionary approach must be applied.

The WWF-Australia has requested that the Commission require jurisdictions to have in place trading rules to prevent water trades that will result in net harm to the environment—either through use of the water onsite or by flow changes due to the shift in extraction points. It has also asked that, where the trading rules are in place, their effectiveness be assessed.

### Discussion and Assessment

South Australia has taken steps to build an effective legislative and administrative framework to enable water trading. There are however, still some constraints on trade that may hinder the broadening and deepening of both intrastate and interstate water markets.

Under the National Water Initiative, South Australia was to immediately remove all institutional barriers to temporary trade of water entitlements. While South Australia has effective arrangements for intrastate temporary trade, some arrangements for interstate temporary trade are not clear.

For this assessment, the Commission is looking for South Australia to be well-advanced in removing existing institutional barriers to permanent water trade and developing the necessary legislative and administrative

arrangements to establish an interim annual threshold limit of four per cent of total water access entitlement for permanent trade out of water irrigation areas.

Water taking allocations and the associated site use approvals are provided for on the water licence. Such an arrangement prevents the entry of non-landholders to the water market. Water holding allocations provide a way around this barrier, at least to some extent. Any party can hold a water holding allocation under a licence, without needing a site use assessment. For this allocation to be used it must be converted to a water taking allocation, then a site use assessment is conducted.

The Commission considers that South Australia's trading rules are generally consistent with the principles set out in the National Water Initiative. The Commission notes that the potential impacts of trade on the environment and existing water users is managed through the use of water transfer criteria specified in the relevant water allocation plan.

The Commission notes that South Australia continues to apply a 20 per cent reduction factor to water allocations traded (permanently or temporarily) in the North Adelaide Plains, as a precautionary measure to reduce the demand for groundwater, while sustainable extraction limits are better defined. The Commission agrees that it is important to define these limits to the best extent possible, and notes the evidence presented by South Australia that the reduction factor has assisted in reducing total water use. The Commission still considers the application of reduction factors to be a disincentive to trade, and urges South Australia to complete its assessment of sustainable extraction limits as soon as possible so it can discontinue the use of reduction factors.

The Commission is satisfied with South Australia's progress in the implementation of a publicly accessible water entitlement register that recognises third-party interests. The Commission stresses the importance of a strong entitlement register in underpinning market confidence and encourages South Australia to continue its plans to make its register available on the Internet.

Overall, the Commission considers that South Australia has made significant progress with regard to its intrastate trading arrangements.

Commitments relating to water trading in the Southern Murray-Darling Basin are discussed below.

#### Southern Murray-Darling Basin Water Trading Progress

For this assessment, New South Wales, Victoria and South Australia were to demonstrate that, by June 2005, they had taken all necessary steps, including making corresponding legislative and administrative changes, to enable exchange rates and/or tagging of water access entitlements, in order to enable the expansion of interstate trade in the southern Murray-Darling Basin (in accordance with clauses 63 (i) and (ii) of the National Water Initiative).

The Commission notes that the major irrigation trusts in South Australia have voluntarily lifted their annual permanent trade out to the interim limit of four per cent of total licence allocation, and that arrangements for the remaining smaller trusts will be finalised through the current review of the state's *Irrigation Act 1994*. South Australia needs to finalise, as soon as possible, this review and any necessary amendments to provide the legislative basis for the removal of barriers to permanent trade out of irrigation districts.

The legislative arrangements for interstate water access entitlement tagging in the southern Murray-Darling Basin are in place in New South Wales. However, Victoria and South Australia have not yet put corresponding administrative arrangements in place that will allow for tagging based trade across state borders. Nor have the three states developed all the arrangements necessary for practically managing tagged interstate trade once it becomes administratively possible.

All states have been actively participating in the Murray-Darling Basin Commission pilot project for permanent interstate trade. Furthermore, New South Wales, Victoria and South Australia have previously agreed (in the Murray-Darling Basin Commission context) that a system of exchange rates would be used to enable the expansion of permanent interstate trade. In this context, all states had been working for a number of years to develop a matrix of exchange rates. In the second half of 2005, New South Wales rejected the modelled exchange rate, insisting that tagging should be used for interstate trading.

As a result, at 1 January 2006, water was unable to be traded between all three states in the terms of the COAG commitment because the necessary steps had not been collectively taken by New South Wales, Victoria and South Australia. Furthermore, the continuing stalemate - with New South Wales not agreeing to trade using the Murray-Darling Basin Commission determined exchange rate matrix and the inability of Victoria to deliver tagged trade until it introduces the necessary administrative arrangements (mid-2007), and South Australia's lack of a timetable for tagging - means that meeting the COAG commitments in this area will continue to be delayed. In addition, the Commission notes that there are other matters still to be settled to operationalise trading in the southern Murray-Darling Basin (including changes to Schedule E to the Murray-Darling Basin Agreement which provides the institutional and regulatory framework for the operation of interstate trade in this part of the Basin).

The failure of southern Murray-Darling Basin states to reach agreement on the necessary arrangements is preventing the further opening up of the interstate water trading market as required by the COAG commitments, representing a major setback to the COAG water reform process.

The Commission recognises that considerable effort has been made by all three jurisdictions to progress the development of interstate trading arrangements. Nevertheless, it appears that interstate trade between all states in the southern Murray-Darling Basin is unlikely to be enabled before 1 July 2007 at the earliest.

The Commission also notes that states are developing bilateral arrangements to allow some interstate trade before July 2007. The Commission understands that New South Wales and Victoria have explored arrangements whereby they can trade using a manual water access entitlement tagging system. At the time of drafting this report, Victoria and South Australia were close to finalising an agreement to allow for trade between those two states using exchange rates.

However, while each state is making some progress towards expanding interstate trade on a bilateral basis, they have manifestly not met their collective commitments to open up interstate trade of permanent water entitlements across the southern Murray-Darling Basin.

The Commission notes the advice of the three southern Murray-Darling Basin states that they are working toward a tagging-based trading system across all jurisdictions by July 2007; however, the Commission considers this an unacceptable delay because it is two years behind the National Water Initiative timeframe for implementation of this key element of water reform.

Also, the Commission is concerned at the prospect of further slippage by the states in meeting these commitments. In the Commission's view, it is critical to maintain momentum on the further expansion of interstate water markets – permanent and temporary – to realise many of the gains of national water reform.

Given the states' failure to meet their commitment in respect of a major element of the COAG water reforms, and in view of the Commission's concerns about the prospect of further slippage, the Commission recommends a suspended National Competition Policy payment penalty of five per cent for each southern Murray-Darling Basin state. The Commission recommends that this payment be recoverable if the states collectively demonstrate, to the Commission's satisfaction, compliance with the following conditions by 1 January 2007:

- that water access entitlements can be permanently traded freely between all interstate sources in the southern Murray-Darling Basin (beyond the existing limitations of the Murray-Darling Basin interstate trade pilot) in accord with the initial COAG National Water Initiative commitment to open up permanent water trade in this region
- that any remaining barriers (for example, in the way water entitlements are specified and converted, administrative barriers, unjustified trading rules, or unacceptable transaction costs) that may affect potential trade have been identified, and
- that there are timely and sufficient steps being taken to overcome any such remaining barriers.

The Commission signals now its intention to recommend that the suspended payments become permanent deductions if the three states collectively are not able to demonstrate, to the Commission's satisfaction, compliance with the above conditions by 1 January 2007.

## 6.4 Best Practice Water Pricing and Institutional Arrangements

### 6.4.1 Water Storage and Delivery Pricing

#### 6.4.1a Metropolitan

##### Assessment Issues

##### *Full cost recovery*

South Australia is required to demonstrate that there has been substantial movement towards upper bound pricing for all metropolitan water and wastewater businesses. For those businesses that are not pricing close to the upper bound of cost recovery, South Australia should demonstrate price paths are in place that will move them towards the upper bound of cost recovery.

South Australia is also required to demonstrate that:

- the undertakings made in relation to Essential Services Commission of South Australia's comments on the 2005-06 transparency statement have been met
- it has further considered its approach to calculating the Weighted Average Cost of Capital, and
- substantial progress is being made towards the upper bound of cost recovery.

##### *Dividends*

South Australia is required to demonstrate, through annual reports, that:

- its dividend policy complies with COAG requirements, including being transparently reported
- it has addressed the other Essential Services Commission of South Australia comments in relation to dividend policy raised in relation to the transparency statement for 2005-06, and
- where the level of dividend payment exceeds 100 per cent of after tax profits, SA Water's capacity to provide water and sewerage services of appropriate quality is not undermined.

##### *Cross-subsidies and Community Service Obligations*

South Australia is required to:

- identify and report remaining cross-subsidies including

any cross-subsidisation in relation to major trade waste dischargers and commercial consumers of water services

- identify and report arrangements to remove cross-subsidies, and
- report on Community Service Obligations and/or any 'free water allowances' provided by SA Water and demonstrate that these are being transparently reported.

SA Water is the primary supplier of water and wastewater to Adelaide and South Australian country towns. For each pricing decision, the South Australian Department of Treasury and Finance prepares a Transparency Statement for Metropolitan and Regional Water and Wastewater Prices in Metropolitan and Regional South Australia which is endorsed by the South Australian Cabinet. Three Transparency Statements have been completed – for the 2004-05 wastewater pricing decision (South Australia Government, 2004a), for the 2004-05 urban water pricing decision (South Australia Government, 2004b), and for the 2005-06 water and wastewater pricing decision (South Australia Government, 2004c). The *2006–07 Transparency Statement* Parts A, B and an interim government response was published on 4 January 2006 (South Australia Government, 2006). The South Australian Cabinet makes a final decision on the level and structure of water and wastewater prices SA Water may charge in metropolitan and regional South Australia.

As of December 2004, the South Australian Treasurer directed the Essential Services Commission of South Australia to undertake an inquiry into the processes undertaken in the preparation of advice to Cabinet, resulting in Cabinet making its decision on the level and structure of SA Water's water and wastewater prices in metropolitan and regional South Australia for 2005–06, with respect to the adequacy of the application of the COAG pricing principles. In undertaking this inquiry, the Essential Services Commission of South Australia is to consider Part A of the Transparency Statement. In considering the processes undertaken for the preparation of advice to Cabinet, the Essential Services Commission of South Australia is to advise on the extent to which information relevant to the COAG principles was made available to Cabinet. The Essential Services Commission of South Australia has completed three inquiries (the 2004–05 water price decision,

2004–05 wastewater price decision and 2005–06 water and wastewater price decision). The Essential Services Commission of South Australia's report of its inquiry into metropolitan and regional water and wastewater pricing processes forms Part B of the transparency statement<sup>5</sup>.

#### Cost recovery

South Australia states that the methodology endorsed by the government in setting water and wastewater prices is aimed at demonstrating appropriate rigour in addressing National Competition Policy and National Water Initiative pricing principles. Minimum revenue requirements are set at the lower bound of cost recovery, that is, the amount of revenue required to allow SA Water to be commercially viable. Maximum revenue requirements are set at the upper bound of cost recovery to allow for asset consumption (depreciation) and a return on assets (the weighted average cost of capital), whilst avoiding monopoly profits.

#### Progress towards Upper Bound

The South Australian Government sets prices and associated target revenues that fall between the maximum and minimum revenue requirements. For water, SA Water's revenue target is well above the lower bound, as illustrated in Part A of the 2006–07 Transparency Statement. For wastewater, SA Water's revenue target is near the upper bound, calculated using a pre-tax weighted average cost of capital of six per cent to seven per cent. Part A of the 2005–06 and 2006–07 transparency statements transparently report this information in the form of tables and graphs.

#### Undertakings made to the Essential Services Commission of South Australia

In Part B of the 2005–06 Transparency Statement, the Essential Services Commission of South Australia noted that the South Australian Government needed to undertake further work in the areas of efficient business costs and contributed assets.

<sup>5</sup> ESCOSA's task is to examine only the process used to prepare advice to Cabinet with respect to the adequacy of the application of the 1994 COAG pricing principles (i.e. pre-National Water Initiative principles only). ESCOSA does not examine the adequacy of the structure and level of water and wastewater prices. Further, ESCOSA does not investigate whether achieving compliance with the 1994 COAG principles indeed achieves the desired outcomes of those principles.



In the area of efficient business costs the Essential Services Commission of South Australia considers that the South Australian Government should:

- continue to further develop the trend analysis of key cost drivers and their likely impact in the short to medium term, and
- explore the link between efficient business costs and the SA Water performance statement and customer charter, to better enable a conclusion to be drawn on efficient business costs by providing more transparency on the 'value-for-money' issue.

In the *2006–07 Transparency Statement*, the South Australian Government provided detailed information on SA Water's compliance with the COAG requirement that operating, maintenance and administrative expenses are based on efficient business costs. As part of meeting this requirement, the government included the *Review of the Efficiency of SA Water's Business Costs and Performance* (South Australian Centre for Economic Studies, 2005) within the *2006–07 Transparency Statement*.

The Essential Services Commission of South Australia noted, in Part B of the *2005–06 Transparency Statement* that the South Australian Government had made an assessment of contributed assets post-1995 and had removed these from the asset base for pricing purposes<sup>6</sup>. The government has argued that there is no 'sound information' available before that time. The Essential Services Commission of South Australia recognises this and states that, with regard to contributed assets, the government is complying with COAG pricing principles; however, it argues that, because contributions of this type have been taking place for a very long time, they possibly constitute a significant proportion of water and wastewater assets. The Essential Services Commission of South Australia also considers that it is possible that the removal of contributed assets would have a differential impact between water and wastewater, as contributed assets are likely to account for a higher proportion of total wastewater assets than total water assets.

<sup>6</sup> Contributed assets are assets that a utility has not paid for itself, but which have become the property of the utility. Some examples of contributed assets are customer contributions for provision of infrastructure, such as new mains, and subdivider contributions.

In Part B of the *2005–06 Transparency Statement*, the Essential Services Commission of South Australia noted that the National Water Initiative requirement to move towards upper bound pricing (i.e. the maximum revenue requirement under the South Australian model) and earn a 'rate of return' on capital may result in a lock-in of excessive prices if the asset base is unreasonably inflated due to the presence of contributed assets. The Commission notes that the South Australian Government has made an assessment of contributed assets post-1995 and has removed these from the asset base; however, this statement still remains valid for contributed assets included in the asset base pre-1995. In Part B of the *2005–06 Transparency Statement*, the Essential Services Commission of South Australia also noted that a move towards upper bound pricing, where contributed assets represent a significant proportion of total assets (as is the case for wastewater), may actually result in charges that generate revenues in excess of the 'true' maximum revenue outcome. The Commission notes that the South Australian Government, in Part C of the *2005–06 Transparency Statement*, states that the estimated real maximum revenue bound adopted by the government is currently the best available estimate. Water and wastewater revenues are within the estimated real maximum and minimum revenue bounds, as required by the COAG pricing principles.

The Essential Services Commission of South Australia suggests that it would be timely for the government to seek a best estimate of pre-1995 contributed assets using data for past land and network developments. The Essential Services Commission of South Australia also notes that, while the government's treatment of contributed assets is transparent, fuller compliance with the COAG principles would result if an estimate of pre-1995 contributed assets were also provided, thereby enabling consistent and more transparent treatment of all contributed assets.

In Part A of the *2006–07 Transparency Statement*, the South Australian Government noted that it had carefully reviewed the treatment of contributed assets in its 2005–06 Transparency Statement. The government reconfirmed that there are insufficient records prior to 1995 to identify contributed assets with any degree of accuracy.

### Weighted Average Cost of Capital

In Part B of the *2005-06 Transparency Statement*, the Essential Services Commission of South Australia noted that the government had applied a narrower band (between six per cent and seven per cent) to calculate the weighted average cost of capital, had included presentation of the various components of the weighted average cost of capital, and had reviewed the weighted average cost of capital based on an efficient supplier's benchmark. The Essential Services Commission of South Australia is concerned that the weighted average cost of capital is based on pre-tax revenues, rather than post-tax revenues and that it would be preferable to determine an appropriate weighted average cost of capital, rather than a range. The Essential Services Commission of South Australia notes that, because tax equivalent regimes are to be included in both upper bound and lower bound price calculations, this implies that a post-tax weighted average cost of capital should be used, as it requires the taxation amount to be included in cash flows.

In Part A of the *2006-07 Transparency Statement*, the South Australian Government notes that its estimate of the pre-tax real weighted average cost of capital is consistent with other regulators' decisions for setting an efficient supplier's benchmark—some regulators adopt a weighted average cost of capital range and others adopt a pre-tax, rather than a post-tax, weighted average cost of capital. The government also notes that selecting a single weighted average cost of capital is not appropriate given the estimation difficulties involved in calculating each input value into the weighted average cost of capital calculation. The South Australian Government comments that weighted average cost of capital issues remain an area of developing regulatory practice, particularly with regard to improving methods by which input variables are estimated. Accordingly, the government intends to keep differences in approach between it and the Essential Services Commission of South Australia under review, as well as broader developments in regulatory practice that may apply.

### Dividends

The South Australian Government has implemented changes to SA Water's dividend policies, including ensuring that SA Water's dividend policies better reflect commercial reality. Additionally, the government has implemented

recommendations as proposed by the Essential Services Commission of South Australia that change the way that dividends are presented. The Essential Services Commission of South Australia's proposals included:

- separating dividend policy from overall contributions policy (to separate it from the tax equivalent regime)
- stating the dividend policy, and
- explaining capital structures (given the relationship with dividend policy).

The new dividend policy incorporates the following key elements:

- dividends would be calculated with consideration of the capital structure targets for each public non-financial corporation
- dividends would be paid based on actual, rather than budgeted, outcomes
- dividends would be paid from after tax profit, rather than on a cash basis. Special dividends may be paid if determined to be appropriate by the Treasurer. Dividends will not exceed the accumulated surplus of the public non-financial corporations
- the dividend requirements of the government as shareholder would be consistent with the approved capital structure bands for the public non-financial corporations, and
- the timing, process of payment and revision of dividends would be on a consistent basis.

In March 2005, the South Australian Government approved a dividend payout ratio and target-gearing ratio for SA Water. The government's decision, which is outlined in Part A of the *2006-07 Transparency Statement*, provides for:

- a debt to total assets ratio range of 15 per cent to 25 per cent for the next four to five years, with a target ratio of 20 per cent, and
- a dividend payout ratio of 95 per cent, based on actual after-tax profit.

The target capital structure takes into account factors such as:

- the volatility of cash flows

- the characteristics of the market in which the business operates
- the capital intensity of the business, and
- financial flexibility to allow for improved and unexpected capital expenditure and changes in operating conditions.

The South Australian Government considers that its new dividend policy reflects commercial realities for an entity with SA Water's business risk profile and provides appropriate incentives to SA Water's management and board. The government has undertaken to annually review the target capital structure of SA Water.

#### Cross-subsidies

South Australia has adopted the Baumol Band approach, as suggested by the National Competition Council, to define cross-subsidies. Based on this approach the following potential cross subsidies in water and wastewater pricing have been identified:

- two-tiered water consumption charges to residential customers—as all customers pay a fixed charge, it is unlikely that the average charge to residential customers would be below the avoidable cost of supplying water.
- property-based water supply charge applied to commercial customers—commercial customers incur a two-part tariff that includes a water use charge and a fixed charge that is based on property value. Given the impact of the fixed charge linked to property value, there may be examples of customers paying substantial amounts for relatively low total water demands (for example, major shopping centres). Nevertheless, these customers would, in most cases, still be paying less than the stand-alone cost of installing their own water system to the appropriate quality, health and environmental standards, and
- property-based wastewater charges applied to residential customers—customers are, in most cases, paying less than the stand-alone cost of installing their own sewerage treatment and disposal system to the appropriate health and environment standards.

The South Australian Government asserts that, based on the above, there are unlikely to be significant cross-subsidies in water and wastewater pricing.

#### Community Service Obligations

Community service obligations funded by the South Australian Government for urban water occur in the following areas:

- administration of the Save the River Murray Levy
- service charge exemptions and concessions
- administration of the pensioner concession scheme
- statewide pricing
- trade waste, and
- other subsidies.

The estimated community service obligations paid to SA Water by the South Australian Government for 2005–06 and 2006–07 are provided in Part A of the *2006–07 Transparency Statement*.

South Australia has provided information on the estimated community service obligation payments made to SA Water for a range of customer categories. However, South Australia has not provided information on the proportion of revenue represented by community service obligations for individual customers to whom a community service obligation is paid.

#### Statewide Pricing

As a result of the government's statewide pricing policy, water and wastewater services are provided to some country locations at less than total economic cost. The South Australian Government provides SA Water with a community service obligation payment to cover the shortfall SA Water incurs in providing these services. These payments constitute more than 90 per cent of the total community service obligation payments made to SA Water.

For water businesses, the community service obligation payment currently represents 51 per cent of total regional water revenue. For wastewater, the community service obligation currently represents 46 per cent of total regional wastewater revenue.

South Australia considers that statewide water and wastewater pricing is an integral part of its equity, social justice and regional policy. Accordingly, as long as the government has a policy of statewide water pricing, there will be the need for a statewide community service obligation.

### Trade Waste

Transitional discounts provided to trade waste dischargers are transparently reported and will be fully phased out by 2006–07.

### Other subsidies

SA Water receives direct payments from various state agencies for the services it provides for emergency services, 'free water allowance' to the Adelaide City, Port Adelaide and Enfield councils and the Government Radio Network.

### New Community Service Obligation Policy

The South Australian Government, as part of its new ownership framework, has adopted a new community service obligation policy which includes a number of principles such as: community service obligations will be valued on a 'cost per unit of output' approach; community service obligation payments are to be transparent and clearly reported; and community service obligations will be subject to an annual review. SA Water's community service obligations were reviewed against this policy. The effects of this revised policy are included in the *2006–07 Transparency Statement*.

The most significant change arising from the new community service obligation policy is the revised method for calculating the statewide pricing community service obligation.

The community service obligation amount is calculated as the shortfall between the revenue raised from regional customers under the statewide pricing policy and the avoidable cost of providing regional services. The avoidable cost will consist of operating costs, depreciation and return on assets. The return on assets is determined on the basis of the lower range of the weighted average cost of capital applied for pricing purposes (six per cent). Annual adjustments will be made to the community service obligation amount to reflect asset revaluations, capital expenditure and price changes.

The Essential Services Commission of South Australia has noted that the community service obligation policy is compliant with COAG principles. It would be more transparent, however, if the South Australian Government provided further details of: the cost differences between

customer categories; the calculation of community service obligations; and an assessment of community service obligation alternatives.

## Discussion and Assessment

### Cost recovery

The Commission considers that South Australia has made significant progress towards meeting its COAG commitments in regard to cost recovery for metropolitan water and wastewater businesses. There are still a few outstanding issues that South Australia will need to address to fully meet its COAG commitments in this area.

South Australia has demonstrated that wastewater is being priced near the upper bound, and water is being priced well above the lower bound. It is not clear that price paths for water are in place to move prices towards the upper bound.

The South Australian Government had made an assessment of contributed assets post-1995, and it has removed these from the asset base for pricing purposes. The Commission notes that the inclusion of contributed assets pre-1995 may result in a lock-in of excessive prices if the asset base is unreasonably inflated. Hence, the Commission would recommend that South Australia seek a best estimate of contributed assets pre-1995 for both water and wastewater before implementing further price increases required to bring prices closer to the upper bound.

South Australia has demonstrated that it has implemented the recommendations of the Essential Services Commission in the area of efficient business costs. As noted above, there is still further action required in the area of contributed assets.

South Australia has demonstrated that it has estimated efficient business costs; and, has explored the link between efficient business costs and the SA Water performance statement and customer charter, thereby providing greater transparency on the 'value-for-money' issue.

South Australia has demonstrated that it has further considered its approach to calculating the weighted average cost of capital and that, based on this, a narrower band (between six per cent and seven per cent) has been applied. South Australia has also presented the various components of the weighted average cost of capital, and has reviewed

the weighted average cost of capital, based on an efficient supplier's benchmark. Nevertheless, the National Water Commission shares the concern of the Essential Services Commission of South Australia that the weighted average cost of capital is based on pre-tax revenues, rather than post-tax revenues, and that it would be preferable to determine an appropriate weighted average cost of capital, rather than a range.

#### Dividends

The Commission considers that South Australia has met its COAG commitments with regard to dividends.

The South Australian Government has implemented changes to SA Water's dividend policies, as recommended by the National Competition Council, to ensure that they better reflect commercial reality. The dividend policy is also transparently reported in the *2005-06 Transparency Statement for Water and Wastewater Prices in Metropolitan and Regional South Australia*.

Additionally, the government has implemented recommendations that change the way that dividends are explained in pricing decisions.

The South Australian Government has changed its dividend policy, with dividends now based on a payout ratio of 95 per cent of actual after-tax profit. This means the dividend payment can no longer exceed 100 per cent of after-tax profits. Additionally, the government's dividend policy does not undermine SA Water's capacity to provide water and sewerage services of appropriate quality because the target capital structure takes into account factors such as: the characteristics of the market in which the business operates; the capital intensity of the business; financial flexibility to allow for improved and unexpected capital expenditure; and changes in operating conditions.

#### Cross-subsidies

With regard to cross-subsidies, the Commission considers that South Australia has met its COAG commitments.

South Australia has identified areas where cross-subsidies are likely to exist, and has reported that there are unlikely to be significant cross-subsidies in water and wastewater pricing. The Essential Services Commission of South Australia has noted that the approach used to define cross-

subsidies may not reveal sufficient information about the major cost differences of serving different customers. They have also noted that the government's new community service obligation policy should assist in this regard.

#### Community Service Obligations

The Commission considers that South Australia has made some progress towards meeting its COAG commitments regarding community service obligations. South Australia has transparently reported the size of estimated community service obligations paid to SA Water by the South Australian Government. It has also provided information on the government's new community service obligation policy, the most significant outcome being the revised method for calculating the statewide pricing community service obligation. This is calculated as the shortfall between the revenue raised from regional customers under the statewide pricing policy and the avoidable cost of providing regional services.

It is difficult for the Commission to determine whether the current community service obligation payment is appropriate, as it is not possible to identify the cost differences between different customer categories, and the extent to which SA Water is recovering its costs across each of these categories.

The Essential Services Commission of South Australia has noted that, although the community service obligation policy is compliant with COAG principles, in order to improve transparency, the South Australian Government should provide further details on cost differences between customer categories and the calculation of community service obligations. The Commission supports this recommendation.

### 6.4.1b Rural and Regional

#### Assessment Issues

**South Australia is required to demonstrate for rural and regional systems that:**

- they have achieved at least the lower bound of cost recovery and are moving towards the upper bound, or
- they have established a price path to achieve at least the lower bound of cost recovery with transitional Community Service Obligations made transparent, or
- for schemes where the lower bound of cost recovery is unlikely to be achieved in the long term, that they have made the Community Service Obligation required to support the scheme transparent, and
- they have made cross subsidies transparent.

*Rural systems – Cost recovery and consumption based pricing*  
South Australia is required to:

- demonstrate that it has met the COAG requirement of achieving at least the lower bound of cost recovery for the remaining nine government-owned irrigation districts, and
- report on progress with the rehabilitation project.

#### *Murray-Darling Basin Commission costs*

South Australia is required to show that:

- Murray-Darling Basin Commission costs are being transparently identified and apportioned to users and that these costs are being passed on to water access entitlement holders, and
- Where these costs continue to be borne by the government, these are being transparently reported (either as Community Service Obligations/subsidies, or as taxpayer funded contributions for public benefit outcomes).

#### Rural Systems —Cost Recovery

**Rural systems in South Australia are either:**

- independent business enterprises that are owned and operated independently from government—for example Murray River irrigation trusts, or
- irrigation schemes owned and operated through SA Water—of which there is only one remaining and this is expected to convert to private trust by the end of January 2006.

As the majority of rural businesses in South Australia are private trusts, South Australia has not provided detailed information on cost recovery for rural systems.

The Commission notes the unexpected delays being experienced by the final irrigation scheme to convert to private Trust, Burdett, as a result of issues relating to stormwater disposal.

In the case of independent business enterprises, a presumption of full cost recovery is made through the absence of subsidies from government or government instrumentalities, except for costs related to governmental planning and management, and for externalities.

#### *Rehabilitation Project*

In 2005–06 the South Australian Government will continue the \$22 million programme of rehabilitation work in the Lower Murray Swamps, which will ultimately prevent polluted dairy water flowing back into the Murray River and improve farm management and viability.

On-ground rehabilitation engineering works are slightly ahead of schedule. Eighty per cent of the land to be rehabilitated has rehabilitation funding deeds approved by the minister, to a value of \$9.5 million out of a possible \$12.5 million of on-ground works for the rehabilitation of the approved 3950 hectares. On-ground works have commenced in six districts, with meters being installed, supply channels being formed, and reuse systems being developed.

Supporting programs include development approval (100 per cent complete), Indigenous heritage negotiation (85 per cent complete), the freeholding of land to irrigators (70 per cent complete), retirement and exit packages (70 per cent complete), and assistance payments for land purchase to consolidate farms (90 per cent complete). In addition, a social wellbeing programme providing counselling support to irrigators, has recently commenced.

The environmental compliance programme within the project commenced in late 2004. It includes an operational on-farm environmental management impact plan, and an exemption regime that is administered by the Environment Protection Authority pursuant to the Environment Protection (Water Quality) Policy 2003. This meets the deadline of mid-2008, by which time irrigators will be required to have an operational re-use water system that captures the first five megalitres of stormwater per 100 hectares of irrigation bay.

### Murray-Darling Basin Commission Costs

Murray-Darling Basin Commission costs are borne predominantly by the government. About 25 per cent of the 2004–05 Murray-Darling Basin Commission contribution was funded through the Save the River Murray Levy. These costs, and the levy, are transparently reported through budget papers, Auditor General's Reports, and the Department of Water, Land and Biodiversity Conservation annual report.

South Australia has provided information on the cost composition of its contribution to the Murray-Darling Basin for 2004–05. South Australia is unable to provide information on the per unit cost of this contribution, expressed against water use or allocation for Murray River users since:

- this depends on how costs are assigned to different beneficiaries and impactors
- the assignment of historical legacy costs to past beneficiaries and impactors
- the variability of use between years, and
- the variability of entitlement between users (for example SA Water has a rolling five-year allocation for its metropolitan water supply).

South Australia has indicated that additional work will be undertaken on this issue in 2006 in conjunction with the South Australian Murray-Darling Basin Natural Resource Management Board.

### Regional systems

Due to the South Australian Government's policy of statewide pricing, water and wastewater services are provided to some country locations at less than total economic cost (total economic cost is generally considered to align with the upper bound). These services' prices are not recovering the full costs of providing the water (including a return on assets). As a result of South Australia's statewide pricing policy, SA Water is provided with a community service obligation to ensure that SA Water earns an appropriate rate of return. The size of the community service obligation paid to SA Water is transparently reported in Part A of the Transparency Statements.

## Discussion and Assessment

### Rural Systems

In regard to rural pricing the Commission considers that South Australia has met its COAG commitments in this area. Of the nine government-owned irrigation districts, only one remains under government ownership, and this district is expected to convert to a private trust shortly. The Commission notes that as the majority of rural businesses are private trusts, South Australia has not provided detailed information on cost recovery for rural systems. The Commission notes the importance of making such information publicly available, including through benchmarking efficient performance as required under the National Water Initiative (Clauses 75 and 76).

South Australia has reported on progress with the rehabilitation project including that on-ground rehabilitation engineering works are slightly ahead of schedule, and that 80 per cent of the land to be rehabilitated has rehabilitation funding deeds approved by the Minister.

### Murray-Darling Basin Commission Costs

The Commission notes that Murray-Darling Basin Commission costs are borne predominantly by the South Australian Government and that these costs are transparently reported through budget papers, Auditor General's Reports, and the Department of Water, Land and Biodiversity Conservation annual report. However, it is not clear whether these costs are reported as community service obligations or subsidies, or as taxpayer funded contributions for public benefit outcomes. Given that Murray-Darling Basin Commission costs are being borne by the government, users may not be receiving signals about their component of these costs. The Commission notes that South Australia will undertake additional work on this issue in 2006 in conjunction with the South Australian Murray-Darling Basin Natural Resources Management Board.

On the basis of the above information, the Commission considers that South Australia has made little progress in meeting its commitments regarding Murray-Darling Basin Commission costs. The Commission will maintain a watching brief on South Australia's progress with this work, and will look to ensure that Murray-Darling Basin Costs are being transparently identified, and water access entitlement holders receive information about their component of these costs.

### Regional Systems - Cost Recovery

The Commission notes that currently the performance of regional businesses in South Australia is not reported separately and so it may be difficult for South Australia to report on cost recovery for these businesses. Even so, the Commission recommends that South Australia continue to seek improvement in the reporting and analysis of data at a regional level, including through benchmarking efficient performance as required under the National Water Initiative (see Clauses 75 and 76).

### Regional Systems – Community Service Obligations

The Commission considers that South Australia has made some progress towards meeting its COAG commitment to making transparent its community service obligation payments. South Australia has reported that water and wastewater services are provided to some country locations at less than total economic cost and that the size of the community service obligation paid to provide water to these locations is transparently reported in the *Transparency Statement for Water and Wastewater Prices in Metropolitan and Regional South Australia*.

South Australia has not provided information on the number of water and wastewater services in country areas for which a community service obligation is deemed necessary, and the proportion this represents of the total cost of delivering services to regional systems. It is, therefore, difficult for the Commission to determine whether the current community service obligation payment is appropriate, as it is not possible to identify the cost differences between different country areas, and the extent to which SA Water is recovering its costs across each of these areas.

It is also unclear, whether regional water service providers, for whom a community service obligation does not apply, are at the lower bound and, where they are at the lower bound, whether there are price paths in place to move them towards the upper bound.

The Essential Services Commission of South Australia has noted that although the community service obligation policy is compliant with COAG principles, in order to improve transparency, the South Australian Government should provide further details on cost differences between customer categories and the calculation of community service obligations. The Commission supports this recommendation.

## 6.4.2 Cost Recovery for Planning and Management

### Assessment Issues

South Australia is required to demonstrate that resource management costs are being recovered, consistent with COAG pricing obligations. In particular South Australia is required to demonstrate:

- that costs associated with activities undertaken for governments are being recovered
- that prices to recover resource management costs are being independently set or reviewed
- the extent to which costs associated with the provision of licenses for water extraction are being recovered
- the extent to which Murray-Darling Basin Commission costs are being recovered
- the extent to which resource management costs are being recovered
- that resource management costs are transparently handled and publicly reported, and
- that adequate public consultation and education about water management charges has been undertaken.

South Australia is also required to report on:

- the outcomes of its review of costs attributable to SA Water and its implementation of the recommendations
- its process for establishing true water resource management costs, and
- the extent to which the 'Save the Murray' and catchment levies are used to fund water resource management activities.

The Minister for Environment and Conservation, and the Minister for the River Murray are responsible for water resource management policy in South Australia. In rural systems, planning and management costs are passed on to water users through the Save the Murray Levy and catchment levies set by Catchment Water Management Boards. From July 2005, Natural Resource Management Boards took over the functions of the Catchment Water Management Boards.



South Australia raises revenue from users of water through land-based and water-based levies. This revenue, in part, funds the administration of Natural Resource Management Boards and resource management projects undertaken with the Department of Water, Land and Biodiversity Conservation.

#### Catchment Water Management Boards

The *Water Resources Act 1997* provided for water or land-based levies to be raised to fund integrated natural resource management programs and projects incorporating management of water, land, vegetation and biodiversity. The projects were those identified by the Catchment Water Management Boards. This represented a move towards accounting for the environmental costs of water use, and cost recovery for water resource management effort. The boards have been responsible for a broad range of activities to ensure the sustainable use of the catchment's water resources.

In prescribed water resources areas, where there is more intensive water use, and greater expenditure on management of the water resources, Catchment Water Management Boards charge water-based levies to cover both increased monitoring and public awareness programs, and remediation projects to mitigate adverse environmental impacts. Land-based levies are raised from landholders who do not pay a water-based levy. These levies cover the environmental externality of landholders' incremental contributions to diffuse source pollution. The water-based levy is generally considerably higher than the land-based levy in each area. South Australia has provided detailed information on levy charges for each Catchment Water Management Board for 2005–06 in its National Competition Policy report to the Commission. South Australia has also indicated that these costs are transparently reported and determined through extensive community consultation process. They are also subject to scrutiny and approval of the Economic and Finance Committee of the South Australian State Parliament. The Commission notes that levies are not paid in arid areas.

#### Save the River Murray Levy

The Save the River Murray Levy is a fixed charge levied on SA Water customers; it came into effect on 1 October 2003. Charges are levied quarterly, and different charges apply to each group, namely residential customers, non-residential or commercial customers, special categories (such as charitable organisations, places of public worship, schools and non-profit organisations), and farming properties. These charges are reported in South Australia's National Competition Policy report to the Commission.

For farming properties, accounts for land holdings of ten hectares or more incur a quarterly levy charge of \$35.20, while those smaller than ten hectares incur the same charge as for residential properties—\$7.85. Supplies provided under 'Supply by Measure' arrangements also incur the \$7.85 charge<sup>7</sup>. The levy applies per account, not per meter.

More than \$19 million is raised annually from the Save the River Murray Levy. The levy contributes to a programme of works and measures to meet the growing concerns for the declining health of the Murray River in South Australia, and increasing community demands for a high security of good quality water for urban supplies and irrigation. The programme, known as the River Murray Improvement Program, is integrated within a larger programme of works and measures formulated with the Murray-Darling Basin Initiative programme and the South Australian River Murray Salinity Strategy.

The Save the River Murray Levy is a small input to South Australia's commitment to spending \$253 million over the next four years towards restoring the health of the Murray River.

In 2005–06, some \$6.2 million will be spent on salt interception schemes to remove about 150 tonnes of salt per day from the river. Some \$19.4 million will be spent on the following Murray-Darling Basin Commission programmes:

- watering stressed and dying River Red Gums at Chowilla, near Renmark
- building fishways to allow fish passage to more than 2000 kilometres of the Murray River, and

<sup>7</sup> 'Supply by Measure' refers to customers' properties that cannot be considered to be 'rateable land'.

- preserving the health of the Coorong by maintaining appropriate channels near the Murray Mouth, while providing for appropriate boating access through the area.

An additional \$1.8 million will be spent on new Murray River projects in South Australia to restore degraded wetlands, improve water re-use, bolster river research and return water to the river.

South Australia has advised that a report completed, but not yet released, by Marsden Jacob Associates in relation to cost-recovery levels for Murray River users in South Australia, New South Wales and Victoria has been superseded and is therefore no longer relevant. Additional work will be undertaken on the robust and transparent allocation of Murray-Darling Basin Commission costs during 2006, in conjunction with the South Australian Murray-Darling Basin Natural Resource Management Board.

South Australia indicated in its draft implementation plan that the Marsden Jacob report would be updated in 2006 with subsequent consideration of pricing reforms for Murray River water users. The Commission notes that this commitment has since changed.

#### Murray-Darling Basin Commission Costs

These costs are transparently reported through budget papers, Auditor General's Reports, and the Department of Water, Land and Biodiversity Conservation annual report.

South Australia has provided information on the cost composition of its contribution to the Murray-Darling Basin for 2004–05. South Australia is unable to provide information on the per unit cost of this contribution, expressed against water use or allocation for Murray River users since:

- this depends on how costs are assigned to different beneficiaries and impactors
- the assignment of historical legacy costs to past beneficiaries and impactors
- the variability of use between years, and
- the variability of entitlement between users (for example, SA Water has a rolling five year allocation for its metropolitan water supply).

About 25 per cent of the 2004–05 Murray-Darling Basin

Commission contribution was funded through the Save the River Murray Levy. The levy is transparently reported through budget papers, Auditor General's Reports, and the Department of Water, Land and Biodiversity Conservation annual report.

#### SA Water and the Department of Water, Land and Biodiversity Conservation

Water resource management in South Australia is the responsibility of the Department of Water, Land and Biodiversity Conservation (except for SA Water retaining some responsibility for administering policy on water conservation by its customers). As the Department of Water, Land and Biodiversity Conservation is funded from consolidated revenue, water resource management costs are currently borne by the South Australian community. The South Australian Government noted in the 2005–06 Transparency Statement that 'Until a consistent Australia-wide approach is resolved, it would be pre-emptive at this stage to include all or part of the Department of Water, Land and Biodiversity Conservation costs in the upper bound for SA Water. Additionally, the Department of Water, Land and Biodiversity Conservation costs include other programs relating to agricultural and commodity use'.

The Essential Services Commission of South Australia noted in its 2004–05 inquiry that 'The legitimate observation by the South Australian Government is that, as the Department of Water Land and Biodiversity Conservation does not invoice SA Water for its resource management costs, they should not be incorporated in the cost considerations' (ESCOSA, 2004a;31). However, in the 2005–06 inquiry, the Essential Services Commission of South Australia noted that 'The Commission understands that a key tenet of the COAG water reform process was to include the true costs of resource management in water pricing ... and that where cross-border trading is possible, that the trading arrangements be consistent and facilitate cross-border sales where this is socially, physically and ecologically sustainable. The Essential Services Commission of South Australia also noted that, under the National Water Initiative, externalities are to recognise water resource management costs both attributable to and incurred by water businesses, and that this will require the eventual inclusion of extraction-based water charges.

### Costs Associated with the Provision of Licences

The Department of Water, Land and Biodiversity Conservation incurs costs that are associated with the provision of licences for water extraction. These costs are partially recovered through licence and other administration fees, they are not independently set or reviewed.

Costs associated with the impacts of changes to licences (such as water trading) are only partially recovered.

### Discussion and Assessment

The Commission considers that South Australia has made some progress towards meeting its COAG commitments with regard to cost recovery for planning and management.

South Australia has met its COAG commitment to report on the extent to which the ‘Save the River Murray’ and catchment levies are used to fund water resource management activities. In addition, South Australia has reported that, in the case of catchment levies, costs are transparently reported and determined through an extensive community consultation process. In most other areas, the Commission considers that South Australia has not met its COAG commitments with regard to cost recovery for planning and management

South Australia has reported that, as the Department of Water Land and Biodiversity Conservation does not invoice SA Water for its resource management costs, these costs should not be incorporated into SA Water’s cost considerations. The Commission supports the comments of the Essential Services Commission of South Australia that resource management costs will eventually require inclusion in extraction-based water charges. The Commission also notes that as part of the COAG water reform process South Australia is required to demonstrate that costs associated with activities undertaken for governments are being recovered.

The Commission will maintain a watching brief on South Australia’s progress in this area of cost recovery for planning and management. The Commission will also maintain a watching brief on South Australia with regard to how the Department of Water, Land and Biodiversity Conservation determines the share of water resource management costs attributable to the new Natural Resource Management Boards.

South Australia has not demonstrated that it transparently handles and publicly reports costs associated with resource management activities undertaken by the Department of Water Land and Biodiversity Conservation. Neither does it demonstrate that adequate public consultation and education about these costs is being undertaken. South Australia will need to improve its level of transparency and degree of public consultation and education regarding costs associated with resource management activities in order to meet its COAG commitments

As noted previously, South Australia has not met its COAG commitment to demonstrate the extent to which Murray-Darling Basin Commission costs are recovered. South Australia has reported that Murray-Darling Basin Commission costs are borne predominantly by the government and that these costs are transparently reported through budget papers, Auditor General’s Reports, and the Department of Water, Land and Biodiversity Conservation annual report. The Commission would still look to South Australia to demonstrate the extent to which the government bears the costs on behalf of users and, which costs, if any, are passed on.

South Australia states that prices set to recover resource management costs are not being independently set or reviewed. Additionally, although South Australia reports that costs incurred by the Department of Water, Land and Biodiversity Conservation in providing licences for water extraction are recovered in part through licence and other administration fees, it has not demonstrated the extent to which these costs are being recovered. The extent to which wider resource management costs are being recovered is also unclear. Therefore, South Australia has not met its COAG commitment to demonstrate that resource management costs are independently set or reviewed.

### 6.4.3 Investment in New or Refurbished Infrastructure

#### Assessment Issues

The Commission will examine compliance where South Australia has decided to proceed with a particular project. In conducting its assessment, the Commission will consider:

- the extent to which the economic viability\* and ecological sustainability credentials of infrastructure proposals have been established prior to works commencing
- the environmental assessment processes for all projects, whether publicly or privately funded, and
- the economic viability appraisals of new or refurbished infrastructure proposals only where governments contribute funds.

The Commission has also sought a report from South Australia on the outcomes of the regional monitoring programme for the Clare Valley Scheme.

\* The National Competition Council 2004 National Competition Policy Assessment explained the economic viability test as involving consideration of whether a project will deliver an overall public benefit to Australia. Commercial or financial viability is an important element, however “a project that is not commercially viable may still satisfy the economic viability test if there is robust evidence that the project will deliver a net social benefit that outweighs the costs of not being commercially viable”.

**South Australia reported that it is currently reviewing the Guidelines for the Evaluation of Public Sector Initiatives, which forms part of the Treasurer’s Instructions. The guidelines recommend that public sector agencies evaluate the economic and ecological sustainability of public sector programs. The government relies on private sector commercial practices for an assessment of economic sustainability. Cabinet considers the broader economic, social and environmental aspects and consequences of significant private sector projects as appropriate.**

**For private sector investment in water infrastructure projects, the proponent is required to undertake relevant and appropriate environmental assessments in accordance with legislative requirements.**

**The major provider of urban water infrastructure in South Australia is SA Water. South Australia reported that SA Water takes into account economic and ecological sustainability principles when investigating new development proposals as summarised below:**

- **all SA Water wastewater treatment plants are certified to the international standard for environmental management systems, ISO 14001, as a part of SA Water’s commitment to the environmental management systems process**
- **two of SA Water’s water treatment plants and four of the contracted out water treatment plants are certified to ISO 14001**
- **SA Water’s environmental policy and corporate environmental management systems commit SA Water to ensuring that ongoing practices and operations incorporate principles of ecological sustainability, and**
- **SA Water has an environmental impact assessment programme for all internal projects where there may be significant environmental impacts. This is reviewed and updated on an ongoing basis as part of SA Water’s environmental management systems process and its commitment to continual improvement.**

#### Eyre Peninsula Water Supply Upgrade

**The present water supply for the Eyre Peninsula in South Australia is sourced from local bore fields (groundwater) supplies. The Southern Groundwater Basins and the Musgrave Groundwater Basins were prescribed in late 2000 and early 2001 respectively. As part of this process the South Australian Department of Water, Land and Biodiversity Conservation reviewed allowable yields from the groundwater resource. SA Water was issued licences that were less than historic extractions, and further reductions were foreshadowed if extended periods of below average rainfall were to occur in the future.**

**Following a master plan study by SA Water to develop options for the augmentation of the supply, the augmentation size selected was 2.3 gigalitres per year. This augmentation was based on requirements to meet growth projections for the Eyre Peninsula and it is consistent with the groundwater allocations. For the purposes of consistent comparison, all viable options (and combinations of those options) were evaluated on the basis of scope and requirements to meet an ultimate capacity of 2.3 gigalitres per year, as identified in the master plan.**

**This meant that a decision to implement a particular option would recognise a medium-to-long term view with proper**

consideration of a range of factors, including: capital and operating costs, environmental and social considerations, South Australia's strategic plan, and any economic development benefits and opportunities that the project would deliver.

The five options considered were:

1. desalination of the brackish surface water from the Tod Reservoir for the first 1.4 giganlitres per year, which would then be supplemented with seawater desalination up to 2.3 giganlitres per year at a cost of \$72.8 million (and net present value of \$67.2 million)
2. seawater desalination for the full 2.3 giganlitres per year from a purpose built plant somewhere on Eyre Peninsula at a cost of \$68 million (and net present value of \$68.3 million)
3. pipeline (Iron Knob to Kimba) using Murray River water for the full 2.3 giganlitres per year at a cost of \$55.7 million (and net present value of \$48.2 million)
4. pipeline (Iron Knob to Kimba) initially up to 1.4 giganlitres per year using Murray River water then, for the full 2.3 giganlitres per year, using water from a regional desalination plant in the vicinity of Whyalla, as proposed by others at a cost of \$55.7 million (and net present value of \$61 million), and
5. desalination of brackish surface water from the Tod Reservoir for the first 1.4 giganlitres per year, which would then be supplemented by a pipeline scheme to utilise a regional desalination plant in the vicinity of Whyalla, as proposed by others, at a cost of \$86.6 million (and net present value of \$70 million).

The pipeline (Iron Knob to Kimba) is the preferred option. It is expected that augmentation of 1.4 giganlitres per year will meet demand requirements for at least five years. Therefore approval has been given to proceed with Stage 1 of the pipeline to provide an extra 1.4 giganlitres per year.

On this basis, the first stages of options 3 and 4 are identical. While the pipeline will initially interconnect with the Morgan-Whyalla pipeline and Murray River water will be used, the option is available to either fully revert to, or augment, the full capacity from a regional desalination plant should this be built.

#### *Economic Viability and Ecological Sustainability*

The alternatives, based on the pipeline (options 3 and 4 above), have the lowest capital cost and the best overall net present value projections. These are the preferred options.

South Australia reports that the following outcomes are expected from the preferred option:

- improved water quality and reduced water restrictions, which have been imposed since September 2001 in Eyre Peninsula townships; this will improve the standard of living and ensure that water supply infrastructure and water resources have sufficient flexibility to meet current and future demands of customers (including economic development) and townships, and
- water conservation measures are brought in line with statewide practices.

In terms of economic viability, an evaluation was conducted by the South Australian Centre for Economic Studies. This study indicated that the pipeline solution was around \$20 million lower in net present value terms than conventional methods of desalination involving either seawater or brackish water (when compared on a 7.5 megalitres per day capacity).

Severe and widespread water restrictions would significantly impact on the community and the environment under the base case (the 'do nothing' option). The gross annual regional product was estimated to fall by about \$3.0 million. In addition, an estimated 95 full-time equivalent jobs could be lost as a result of the flow-on effects of activity lost due to reduced spending by the affected households.

Compared with the base case, the pipeline option contributes to protecting these benefits and the community's current quality of life. Horticultural and agricultural activities, with associated benefits to small business in the community, will be preserved as a result of the availability of water.

In addition, if groundwater allocations are further reduced in the future it is likely that additional restrictions would have to be extended to other users. The potential economic impacts could include, but are not limited to, negative impacts on future regional growth and current economic activities including tourism, agriculture and grazing.

In terms of environmental outcomes, a more reliable water supply infrastructure will reduce the pressure on the existing groundwater basins and therefore make the supply more sustainable.

South Australia reported that the pipeline option has a number of environmental advantages compared to the desalination options, including:

- the lowest power consumption and therefore the least environmental impact from greenhouse gas emissions, which was the most significant factor in a life-cycle analysis of the options
- no waste discharge (brine) stream and no requirement for an Environmental Protection Authority licence, with the result that there is no risk of impact to the marine environment or the valuable aquaculture industry, which is an important part of the state and regional economies, and
- enabling increased environmental flows to the downstream wetlands and use of the Tod catchment water to support economic development in the region.

#### *Clare Valley Scheme*

The Clare Valley Scheme commenced only in December 2004, with limited uptake for irrigation. Additional stream monitoring stations and observation bores have been installed and data from these stations are being received but no outcomes can be reported because of the limited uptake.

### Discussion and Assessment

The Commission considers that South Australia has made some progress towards meeting its COAG commitments with regard to investment in new or refurbished infrastructure.

South Australia has established the economic viability and ecological sustainability credentials of the Eyre Peninsula Water Supply Upgrade prior to deciding on the preferred option and commencing work on the supply upgrade, and has demonstrated that the economic viability and ecological sustainability credentials of the preferred option outweigh that of other options.

South Australia has made satisfactory progress towards meeting its COAG commitment to evaluate the economic and ecological sustainability of public sector programs.

South Australia reported that it is currently reviewing the *Guidelines for the Evaluation of Public Sector Initiatives*, which forms part of the Treasurer's Instructions. With regard to economic sustainability, the government is reliant on private sector commercial practices.

South Australia has met its COAG commitment to have in place environmental assessment processes for all projects, whether publicly or privately funded. For private sector investment in water infrastructure projects, the proponent is required to undertake relevant and appropriate environmental assessments in accordance with legislative requirements. Cabinet considers the broader economic, social and environmental aspects and consequences of significant private sector projects, as appropriate.

South Australia has not met the request made in this assessment to report on the outcomes of the regional monitoring programme for the Clare Valley Scheme. The Commission notes that outcomes cannot be reported because of the limited take-up of irrigation. The Commission will maintain a watching brief on South Australia's progress with reporting on the outcomes of the regional monitoring programme.

### 6.4.1 Release of Unallocated Water

#### Assessment Issues

The Commission will look for South Australia to demonstrate that any releases of unallocated water, including recycled or other sources of water, are occurring in a manner that complies with its COAG water reform obligations. In particular, the Commission will consider whether:

- water plans have increased allocations to consumptive use
- the water required to achieve environmental outcomes is adequately met prior to the release of unallocated water
- the impact on the environment is considered before any new entitlements are issued
- all other avenues for meeting demand have been carefully examined, and
- market-based mechanisms are employed in the release of unallocated water, including recycled water.

South Australia should report on the mechanism(s) used to release the water for the Clare Valley Scheme.

South Australia reports that all major water resources are under formal management with water allocation plans and that, in general, water resources are fully allocated but not necessarily fully utilised.

Some minor water resources remain outside formal management but these are under review and assessment as part of the South Australian Government's reform agenda. Future management regimes will be determined using the stressed resource methodology, which includes an assessment of environmental water requirements.

The *Natural Resources Management Act 2004* provides for unallocated water in prescribed areas to be set aside for consumptive use for strategic purposes, if the government so desires. South Australia reported that it had set aside water for strategic purposes in the South East. The minister can lease water held in the strategic reserve for consumptive use on a temporary basis (up to 15 years), according to conditions prescribed by regulations.

The terms and conditions for the allocation and use of this strategic reserve have yet to be determined as there has not yet been any specific proposal to use this water. In a number of management areas, the strategic reserve also provides some ability to adjust for the impacts of interception of groundwater interception by forest plantation development.

Unallocated water that is identified in a water allocation plan (and is not part of the strategic reserve) can also be allocated by auction or tender. The *Natural Resources Management Act 2004* requires that the allocation method be specified in the water allocation plan.

#### *Clare Valley Scheme*

In the case of the release of water in the Clare Valley, there are two issues the Commission has considered. Firstly, South Australia commissioned a report dealing with the use of imported water (from the Murray River) in view of its salt load. The impacts of using this water were examined at both the sub-catchment and the individual property level. Additional water has been allowed in some subcatchments, while no additional salt load through importing water was allowed in others.

A number of policies and principles were developed in conjunction with the local community. These policies were aimed at preventing an increase in salt load into the Clare

Valley, which includes the exchange of native water for imported water. Regional and local monitoring programs were enhanced to ensure that the salt balance within the Clare Valley is not adversely impacted. Applications are still being assessed concerning their suitability to use imported water in the Clare Valley area.

## Discussion and Assessment

South Australia has not sufficiently demonstrated that it has met its COAG commitments regarding the release of unallocated water. The Commission notes that the *Natural Resources Management Act 2004*, provides for unallocated water in prescribed areas to be set aside for consumptive use for strategic purposes, if the government so desires. The Commission also notes that the government may also choose to allocate unallocated water that is part of a water allocation plan (and not part of the strategic reserve) by auction or tender.

It is not clear to the Commission that the South Australian government has in place a process for assessing the impact on the environment before any new entitlements are issued, or that environmental outcomes will be adequately met prior to any release of unallocated water. South Australia has also not sufficiently demonstrated that other avenues for meeting demand have been carefully examined prior to release of unallocated water.

### 6.4.2 Environmental Externalities

#### Assessment Issues

The Commission will look for South Australia to:

- report the extent to which they are identifying and recovering environmental costs through their pricing regimes
- provide evidence that environmental costs imposed on and incurred by water businesses are transparently passed on through prices charged to water users
- where externalities are not included in pricing regimes, demonstrate price paths that will more towards achieving full cost recovery within a reasonable timeframe, and
- where not transparently incorporated into pricing regimes, show that they have identified externalities and,

after examination, have concluded that inclusion of an externality in pricing is not feasible or practical.

South Australia should also report on:

- the outcomes of its review and its implementation of the recommendations
- its response to the Essential Services Commission of South Australia's recommendation that the information in the transparency statement on externality costs be enhanced
- the nature of the 'Save the River Murray' and catchment levies, showing that these are consistent with COAG pricing obligations, including the requirement to transparently attribute environmental costs, and
- the extent to which the levies are used to address externalities.

**South Australia partly recovers externalities through natural resource management charges in the form of the Save the River Murray Levy and catchment levies set by Natural Resource Management Boards, which replaced Catchment Water Management Boards from January 2006. Externalities associated with SA Water are also recovered through water and wastewater prices set by SA Water.**

#### Save the River Murray Levy

The Save the River Murray Levy is a fixed charge collected by SA Water on behalf of the Save the River Murray Fund. The fund, which is held by the Minister for the River Murray, contributes to a programme of works and measures to restore the health of the Murray River. The funds are not included within SA Water's profit and loss statement, balance sheet, or taken into consideration for urban water pricing purposes.

#### Catchment Levies

The catchment levy comprises both a water-based levy and a land-based levy.

The water-based levy is collected by the Department of Water, Land and Bio-diversity Conservation on behalf of the Catchment Water Management Boards. It covers monitoring and public awareness programs and remediation projects to mitigate adverse environmental impacts.

The land-based levy is collected by local councils, on behalf of the boards, from landholders who do not pay a water-

**based levy. This levy is used by the boards to cover the environmental externality of each landholder's incremental contribution to diffuse source pollution.**

#### SA Water's Externalities (Environmental Costs Attributable to and Incurred by SA Water)

**Externality costs that are attributable to SA Water's water businesses are included in operating expenditure amounts. All environmental costs attributed to, and incurred by, SA Water are incorporated into the maximum and minimum revenue outcomes for full cost recovery.**

#### Water

**For water, externalities that are internalised by SA Water, and then passed on to users, include payments by SA Water to the Natural Resource Management Boards.**

#### Wastewater

For wastewater, the independent Environment Protection Authority is responsible for setting the environmental standards SA Water is required to meet for processing and disposing of wastewater. In Part A of the 2005–06 Transparency Statement, the South Australian Government states that SA Water's costs of meeting all environmental requirements are difficult to identify separately.

Nevertheless, in Part B of the *2005–06 Transparency Statement*, the Essential Services Commission of South Australia stated that the inclusion of externality costs that are both attributable and incurred by SA Water in the Transparency Statement is compliant with the COAG principles.

#### Environmental Enhancement Levy for Wastewater

A portion of SA Water's costs, in meeting the Environment Protection Authority's requirements for environmental standards for processing and disposing of wastewater, is recovered through an environmental enhancement levy. The environmental enhancement levy on sewer rates was introduced in 1990 to accelerate environmental improvement programs to minimise environmental impacts and meet legislative requirements. The levy, which is effectively 8.6 per cent of total wastewater rate revenue, raised \$21.2 million in 2005–06.



Part A of the *2005–06 Transparency Statement* details the projects against which future environmental enhancement levy revenues have already been expended up until June 2004.

Part A of the *2005–06 Transparency Statement* stated an intention to review the connection between the revenue and payment arrangements, to the Environmental Protection Authority, of a component of the environmental enhancement levy (an additional 1.4 per cent to the 8.6 per cent levy discussed above, which is valued at \$3.7 million). The government's review of this arrangement identified that funding of the Environmental Protection Authority should continue to be through direct appropriation from the government and by licence fees. The 'Environmental Protection Authority' component of the levy remains incorporated into wastewater revenues. The externality costs attributable to SA Water's wastewater businesses (mainly capital expenditure projects) continue to be included in the asset base.

The Essential Services Commission of South Australia states, in Part B of the *2005–06 Transparency Statement*, that it is not clear that works funded through the environmental enhancement levy deal with externalities any more or less than the other wastewater projects that SA Water must undertake.

## Discussion and Assessment

The Commission considers that South Australia has made some progress towards meeting its COAG commitments for environmental externalities. There are still some outstanding issues that South Australia needs to address in order to comply with these COAG commitments.

South Australia has reported that it currently recovers the costs of environmental externalities in water and wastewater through natural resource management levies, and through prices charged by SA Water for water and wastewater services. An environmental enhancement levy on sewer rates is used to recover a portion of SA Water's costs of meeting environmental externalities associated with wastewater.

### Environmental Enhancement Levy

It is not clear that works funded through the environmental enhancement levy deal with externalities any more or less than other wastewater projects that SA Water must undertake – a concern which the Commission shares with the Essential Services Commission of South Australia. To meet its COAG obligations for this assessment, the Commission recommends that South Australia report on the extent to which this levy is used to address environmental externalities, as well as transparently attributing these environmental costs. Specifically, the Commission asks that South Australia report on the environmental improvement programs that revenue from the levy is used to fund.

The Commission notes that the government has reviewed the connection between the revenue and payment arrangements to the Environmental Protection Authority of a component of the environmental enhancement levy, and has concluded that direct funding of the Environmental Protection Authority should continue to be through direct appropriation from the government and by licence fees. The Commission also notes that South Australia has provided further information in its transparency statements on externalities. However, the Commission recommends that this information be further enhanced, especially with regard to the environmental enhancement levy.

### Save the River Murray Levy and Catchment Levy

The Commission notes that revenue from the Save the River Murray Levy and the catchment levy is used to fund water resource management activities. It is not clear, however, to what extent these activities are being used to explicitly address externalities. The Commission requests that South Australia report in future on the extent to which revenue from the Save the River Murray Levy and catchment levies are used to address externalities and to ensure that environmental costs associated with these levies are appropriately and transparently attributed to water users.

### Pricing for Externalities

South Australia is also required to demonstrate that, where externalities are not transparently incorporated into pricing regimes, they have in place price paths that will move towards achieving full cost-recovery within a reasonable timeframe. Alternatively, South Australia should demonstrate

**that inclusion of externalities in pricing is not feasible or practical. The Commission considers that South Australia has not undertaken systematic examination of externalities and pricing to meet this commitment.**

### 6.4.3 Institutional Reform

#### Assessment Issues

##### *Independent economic regulation*

South Australia is required to provide information on the role of economic regulators in setting or reviewing prices, or price setting processes, and the extent to which conflicts of interest are addressed where the water industry regulator and the service provider are responsible to the same Minister.

The Commission is interested in the public reporting and consultation aspects of the independent body's work, as well as its findings in relation to pricing compliance. Where the independent body's role is to review rather than set prices, the Commission will examine the manner in which the results of reviews are addressed by the relevant government, especially where pricing decisions are at variance with pricing recommendations.

South Australia is also required to demonstrate the involvement of the Essential Services Commission of South Australia in reviewing prices for SA Water since the 2004 National Competition Policy assessment, and the extent to which its recommendations are being implemented.

##### *Participation in benchmarking processes*

The Commission will look for South Australia to demonstrate that participation in national processes for inter-agency comparisons and benchmarking, and benchmarking systems managed by WSAA, AWA and ANCID is continuing. South Australia is also required to demonstrate that there has not been a decline in participation, for metropolitan, non-major urban and rural service providers.

##### *Benchmarking the performance of water authorities – progress with development of a national framework*

South Australia is required to demonstrate that it has made progress with the development of a national framework for benchmarking of pricing and service quality for metropolitan, non-metropolitan and rural water delivery

agencies, including whether appropriate consultation has occurred.

##### *Institutional separation*

South Australia is required to demonstrate that its institutional arrangements are continuing to achieve appropriate separation.

##### *Devolution of irrigation scheme management*

South Australia is required to demonstrate its progress in devolving management arrangements for the lower Murray, consistent with its commitments under the 1994 COAG water reform agreement and the National Water Initiative.

#### Independent Economic Regulation

**The Essential Services Commission of South Australia reviews the water and wastewater price setting processes underpinning the water and wastewater pricing decision by the South Australian Cabinet. As part of this role, the Essential Services Commission of South Australia considers the adequacy of the application of the COAG pricing principles in the South Australian Government's process for setting SA Water's water and wastewater prices<sup>8</sup>.**

**The Essential Services Commission of South Australia has completed three inquiries—the 2004–05 water price decision, the 2004–05 wastewater price decision, and the 2005–06 water and wastewater price decision. The Essential Services Commission of South Australia's report of its inquiry into metropolitan and regional water and wastewater pricing processes forms Part B of the transparency statement.**

**Regular review of pricing processes of the South Australian Government by the Essential Services Commission of South Australia is expected to continue into the immediate future.**

<sup>8</sup> ESCOSA's task is to examine only the process used to prepare advice to Cabinet with respect to the adequacy of the application of the 1994 COAG pricing principles (i.e. pre-National Water Initiative principles only). ESCOSA does not examine the adequacy of the structure and level of water and wastewater prices. Further, ESCOSA does not investigate whether achieving compliance with the 1994 COAG principles indeed achieves the desired outcomes of those principles.

The Essential Services Commission of South Australia's findings in relation to the price setting processes for SA Water by the South Australian Government are transparently reported in its *Inquiries into the Metropolitan and Regional Water and Wastewater Pricing Processes* (ESCOSA, 2004a, 2004b and 2005), and forms Part B of the transparency statement. The South Australian Government then addresses the findings of the Essential Services Commission of South Australia's inquiries in its *Transparency Statement for Water and Wastewater Prices in Metropolitan and Regional South Australia* for the following year's price determination. In its National Competition Policy report, South Australia has reported against its progress in addressing the matters raised by the Essential Services Commission of South Australia in its enquiries into the 2004–05 and 2005–06 pricing decisions.

In conducting its pricing processes inquiries the Essential Services Commission of South Australia is not required to hold public meetings, public seminars or workshops. It may receive and consider any written submissions as it thinks appropriate and it must advertise to call for written submissions to be lodged no later than 14 days from the date of publication of the notice of inquiry.

#### Participation in Benchmarking Processes

SA Water participates in the Water Services Association of Australia's benchmarking framework for urban water businesses, but benchmarking for regional water utilities is no longer undertaken at a national level because of the demise of the performance monitoring report managed by the Australian Water Association.

In its inquiry into the 2004–05 and 2005–06 price setting processes of the South Australian Government, the Essential Services Commission of South Australia noted that the government should further develop interstate benchmarking of regional services. In response to this, the government, for the 2006–07 pricing decision, sought independent advice regarding benchmarking of SA Water's customer service standards and the efficiency of its metropolitan and regional business costs. In the report prepared by the South Australian Centre for Economic Studies, information on the performance of a few key regional water and wastewater service providers over time is provided.

Eight irrigation water providers in South Australia participate in the performance monitoring report managed by the Australian National Council on Irrigation and Drainage.

#### Institutional Separation

The Minister for Environment and Conservation and the Minister for the River Murray are responsible for water resource management policy.

The Minister for Administrative Services, as the minister responsible for SA Water, brings to Cabinet matters relating to water and wastewater price setting, including the price setting method.

The Treasurer is responsible for budget deliberations and financial performance monitoring related to SA Water's functions. The Treasurer, as the minister responsible for Essential Services Commission of South Australia, directs the Essential Services Commission of South Australia to undertake an inquiry into the processes undertaken in the preparation of advice to Cabinet, resulting in Cabinet making its decision on the level and structure of SA Water's water and wastewater prices in metropolitan and regional South Australia.

While the Treasurer is the minister responsible for the Essential Services Commission of South Australia, he does not interfere in the Essential Services Commission of South Australia's regulatory decisions. Generally speaking, the Treasurer considers administrative matters related to Essential Services Commission of South Australia, including appointments, budget and financial matters (for example, consideration of the Essential Services Commission of South Australia's annual performance plan and budget).

Accordingly, South Australian considers that there are no internal 'conflicts of interest' faced by ministers arising from the administration of legislation related to water pricing and resource management issues.

Major policy proposals on water pricing and resource management issues are submitted by the relevant minister to Cabinet for consideration and decision-making.

### Devolution of Irrigation Scheme Management

The Lower Murray Reclaimed Irrigation Areas, which lie between Wellington and Mannum, require improved management and rehabilitation in order to reduce their environmental impact on the Murray River, monitor water use and on-farm efficiency, and improve farm productivity.

From 1 January 2003, the operation and maintenance of the irrigation infrastructure has been performed by Lower Murray Operations Pty Ltd, a company formed by the irrigators, under a contract with the Minister for the River Murray. This was an interim step towards self-management, which is a formal process covered by the *Irrigation Act 1994*. The contract replaced previous arrangements under which SA Water performed the function. It provided irrigators with an opportunity to control costs by determining the work programme they required. The restructuring programme has led to farm consolidation and retirement of less viable land, thus helping the transition to a sustainable irrigation industry.

Significant progress was made in 2004–05 in converting the government irrigation districts to self-management, with six of the nine districts converted to self managed private trusts. One of the remaining three districts was converted to private trust on 24 September 2005, with the other expected to become self-managed by the end of January 2006. The remaining district was retired from irrigation.

### Discussion and Assessment

#### Independent Economic Regulation

The Commission considers that South Australia has made significant progress towards meeting its COAG commitment regarding the role of its economic regulator, the Essential Services Commission of South Australia.

South Australia has provided information on the role of the Essential Services Commission of South Australia in reviewing the price setting processes underpinning the water and wastewater pricing decision for SA Water by the South Australian Cabinet. South Australia has also demonstrated that the findings of the Essential Services Commission of South Australia are transparently reported and that the South Australian Government addresses the findings of the Essential Services Commission of South

Australia's inquiries in its *Transparency Statement for Water and Wastewater Prices in Metropolitan and Regional South Australia*.

South Australia has also demonstrated that the involvement of the Essential Services Commission of South Australia in reviewing price setting processes for SA Water is continuing and that its recommendations, for the most part, are being implemented as reported in the *Transparency Statement for Water and Wastewater Prices in Metropolitan and Regional South Australia*.

The Commission notes that in conducting its pricing inquiries, the Essential Services Commission of South Australia is not required to hold public meetings, public seminars or workshops and that it may exercise discretion in considering written submissions. Hence, it is not clear to the Commission that adequate public consultation is taking place regarding the Essential Services Commission of South Australia's pricing inquiries.

#### Participation in Benchmarking Processes and Progress with Development of a National Benchmarking Framework

The Commission considers that South Australia has made significant progress in meeting its COAG commitments for this component of the assessment. South Australia has continued to participate in national processes for benchmarking of pricing and service quality including those managed by the Water Services Association of Australia and the Australian National Council on Irrigation and Drainage. The Commission notes that South Australia has completed a report on benchmarking of SA Water's customer service standards and the efficiency of its metropolitan and regional business costs. This information has been collected only for a selection of regional businesses and is a one-off study. The Commission would encourage South Australia to continue to seek improvement in the reporting and analysis of performance data at a regional level.

The Commission notes that South Australia is contributing towards development of a national benchmarking framework under the National Water Initiative.

### Institutional Separation

**The Commission considers that South Australia has made satisfactory progress in meeting its COAG commitment to demonstrate that its institutional arrangements are continuing to achieve appropriate separation.**

South Australia reports that ministers have no internal ‘conflicts of interest’ arising from the administration of legislation related to water pricing and resource management issues. In particular, while the Treasurer is the minister responsible for the Essential Services Commission of South Australia, he does not interfere in the Essential Services Commission of South Australia’s pricing processes inquiries.

### Devolution of Irrigation Scheme Management

The Commission considers that South Australia has satisfactorily met its COAG commitments regarding the devolution of irrigation scheme management in the lower Murray River. South Australia has reported that seven of the nine government-owned irrigation districts have now converted to self-managed private trusts and that one is expected to become self-managed by the end of January 2006. The other one has been retired from irrigation.

## 6.5 Integrating Water Management for Environmental and Other Public Benefit Outcomes

### 6.5.1 Institutional Arrangements

#### Assessment Issues

Water planning frameworks are to provide for adaptive management of surface and groundwater systems in order to meet productive, environmental and other public benefit outcomes; to identify the environmental and other public benefit outcomes sought for water systems; and to develop and implement management practices and institutional arrangements that will achieve those outcomes.

To this end, South Australia has agreed to establish effective and efficient management and institutional arrangements under the National Water Initiative.

For the 2005 National Competition Policy assessment, the Commission is looking for South Australia to have progressed its implementation of effective and efficient

management and institutional arrangements to ensure the achievement of environmental outcomes.

The Commission is also looking for South Australia to describe the public education and consultation activities undertaken in relation to the integrated management of environmental water.

#### Effective and efficient management and institutional arrangements

The provision of water for the environment is recognised under the *Natural Resources Management Act 2004*. This Act replaced the *Water Resources Act 1997* in July 2005, in an effort to integrate the management of the state’s natural resources.

The provisions for water management have been transferred to the *Natural Resources Management Act 2004*, including the provision of water allocation plans—the principal vehicle for water sharing, use and management of prescribed streams<sup>9</sup> in South Australia.

The *Natural Resources Management Act 2004* requires that water allocation plans recognise different types of resources and that, in allocating those resources, environmental outcomes are taken into account. It also requires that water allocation plans describe environmental water provisions and how they will be protected. Water for environmental purposes can be held as part of the non-consumptive pool (unallocated environmental water), or as an allocation under a license that is specified as being for environmental purposes. The Act requires water allocation plans.

The organisational arrangements for managing environmental water in South Australia include the following.

The Department of Water, Land and Biodiversity Conservation is responsible for:

- developing state policy in relation to environmental flows, including the *State Water Plan 2000*, which outlines the broad principles for providing water for the environment and the framework under which allocations are drawn up, and

<sup>9</sup> South Australian streams are prescribed by the minister upon the recommendation of the Catchment Water Management Board (or Natural Resources Management Board in the future) when the level of water use and the declining condition of an area’s water resources indicate that sustainable management is needed.

- overseeing South Australia's implementation of The Living Murray 'First Step' decision, the National Water Initiative, Murray-Darling Basin intergovernmental agreements, and the strategy *Environmental Flows for the River Murray*.

Regional Natural Resources Management Boards are locally-driven statutory bodies that report to the Minister for Environment and Conservation. They will be responsible for:

- preparing water allocation plans for each of the prescribed water resources in its region, and
- managing environmental water provisions, in accordance with existing water allocation plans.

The South Australian Murray-Darling Basin Natural Resources Management Board will assume the function of the South Australian Murray River environmental manager, which is to provide clear accountability for delivering environmental flow outcomes for the Murray River in South Australia. The board will oversee environmental flow management decisions and determine priorities for state-based environmental water delivery and management.

Other features of environmental water management that South Australia considers significant are discussed below.

#### Shared Resources between Jurisdictions

In terms of joint arrangements between jurisdictions, South Australia is signatory to the:

- *Intergovernmental Agreement on Addressing Water Over-allocation and Achieving Environmental Objectives in the Murray-Darling Basin 2004* (COAG, 2004b)—this agreement is to ensure integrated provision of environmental flows in the Murray River and its tributaries
- 1985 Border Groundwaters Agreement—this agreement is to provide integrated and sustainable management of the groundwater resources of the Otway and Murray Basins along the South Australia – Victoria border, and
- Lake Eyre Basin Intergovernmental Agreement—this agreement is to provide for sustainable management of the water and related natural resources associated with cross-border river systems in the Lake Eyre Basin to avoid downstream impacts on associated environmental, economic and social values.

In addition, South Australia is a member of the Great Artesian Basin Coordinating Committee. The primary role of the committee is to provide advice from community organisations and agencies to state, territory and Australian government ministers on efficient, effective and sustainable whole-of-basin resource management and coordination activities between stakeholders.

South Australia has also made preliminary approaches to the Victorian Government in relation to cooperative arrangements for surface water in South Australia's South East and Victoria's South West.

#### *Interconnected Surface and Groundwater Systems*

The *Natural Resources Management Act 2004* enables various natural resources to be managed jointly. Water allocation plans allow for surface water – groundwater interaction where it is relevant. The *Clare Valley Prescribed Water Resources Area Water Allocation Plan* is one example of a plan that integrates groundwater and surface water management in South Australia.

The South Australian Government also intends to work with regional Natural Resources Management Boards, local government and other stakeholders to improve integration between water resources management and development planning systems, and seek integrated management of surface water and groundwater, where these resources are physically related.

#### *Audit, Review and Public Reporting Procedures*

The *Natural Resources Management Act 2004* establishes an adaptive management framework that requires monitoring, evaluation and review of plans, including water allocation plans. South Australia's water allocation planning processes allow for the refinement of environmental water provisions over time, based on mandatory ecosystem health monitoring and improved knowledge.

All water plans, including the *State Water Plan* and water allocation plans, must be reviewed at least once every five years in accordance with the *Natural Resources Management Act 2004*. Nine of South Australia's 16 water allocation plans are due for review in late 2005 or early 2006.

Regional Natural Resources Management Boards are also required to report annually, to the Minister for Environment and Conservation, on the extent to which they are implementing their water allocation plans, including

the extent to which implementation of the plans have succeeded in achieving the objects of the *Natural Resources Management Act 2004*.

The Minister for Environment and Conservation's powers also support the water allocation review process. The minister can vary a water licence (including the allocation, or the basis of allocation or the conditions) to make licences consistent with the relevant water allocation plan. Additionally, the minister may reduce water allocations at any time if water quality or quantity, or the dependent ecosystems, are affected or likely to be affected.

#### Environmental Water Trading

South Australia's *Draft State Natural Resources Management Plan* (NRMC, 2005) discusses the trade of environmental water. The draft plan states that:

- environmental water provisions defined through operational or extractive constraints are not tradeable, and
- environmental water provisions that are defined as allocations may be made available to be traded, where physically possible, on the temporary market when they are not required to meet environmental or other public benefit outcomes, and provided such trading is not in conflict with those outcomes.

Water allocation plans can control the trading rules that apply to licences issued for environmental purposes.

#### *High Conservation Value Rivers, Reaches and Groundwater Areas*

South Australia identified in its *Draft State Natural Resources Management Plan* that high conservation value watercourses and wetlands continue to be threatened by management actions and landuse planning decisions, in many cases because the state lacks an inventory of the status and extent of watercourses and wetlands. The draft plan specifies that a management priority for 2005–10 is the protection of wetlands and watercourses of identified conservation significance.

In the first instance, South Australia intends to undertake a comprehensive inventory and assessment of the condition of rivers and wetlands. Wetlands and watercourses that are identified as having conservation significance will

be protected by measures under the *Natural Resources Management Act 2004*. Regional natural resource management plans will use a range of measures to manage threats, and protect wetlands and watercourses of identified conservation significance.

South Australia's *Environmental Flows for the River Murray* also provides for the protection of high conservation value water dependent ecosystems. This strategy, which is principally concerned with the management and delivery of flows to priority ecological assets in South Australia, will help the state meet its COAG commitment to The Living Murray 'First Step' decision.

The strategy outlines those policies and plans that will guide decision-making for delivery and managing flows to the significant ecological assets within South Australia (Chowilla Floodplain and the Lower Lakes, Coorong, and Murray Mouth). In addition, it identifies actions that will achieve ecological benefits in other targeted priority areas.

#### Public Education and Consultation Activities

The *Natural Resources Management Act 2004* prescribes a detailed community consultation process for the development of water allocation plans.

Natural Resources Management Boards have statutory obligations in relation to the consultation and the preparation of water allocation plans. When preparing water allocation plans, boards must consult with the public by inviting them to:

- make written submissions, and
- attend a public meeting in relation to the draft water allocation plan.

The board must prepare a report on the matters raised during consultation on draft plans, and on any recommended alterations to plans, for submission to the Minister for Environment and Conservation.

Natural Resources Management Boards will also be required to conduct considerable community consultation during the review of water allocation plans.

Additional public education and consultation activities recently undertaken by South Australia, in relation to environmental water management, have included:

- public consultation on the draft strategy *Environmental Flows for the River Murray*, and
- establishment of asset co-ordinating committees and community reference groups for the South Australian significant ecological assets under The Living Murray 'First Step' decision.

## Discussion and Assessment

### Effective and Efficient Management and Institutional Arrangements

South Australia formally recognises environmental water under the *Natural Resources Management Act 2004*. Statutory water allocation plans must describe environmental water provisions and how they will be protected.

The Commission acknowledges that South Australia is continuing to develop management and institutional arrangements to support implementation of the environmental water provisions under the *Natural Resources Management Act 2004*. For example, South Australia:

- outlines statewide policies and principles for managing environmental water in its State Water Plan. This plan will be reviewed and then adopted as South Australia's first state natural resources management plan, under the *Natural Resources Management Act 2004*
- recognises the recently established Natural Resources Management Boards as its environmental water managers
- incorporates ecosystem health monitoring and review procedures for measuring environmental outcomes in water allocation plans. These arrangements provide for adaptive management of surface and groundwater systems, as these plans must be reviewed at least every five years
- intends to allow the trading of environmental water that is defined as an allocation on the temporary water market, and
- requires water allocation plans to recognise and jointly manage different types of resources, for example inter-connected groundwater and surface water systems.

Additionally, the Commission acknowledges that South Australia is actively managing several significant ecological assets under The Living Murray 'First Step' decision. The Commission is also aware that South Australia has listed the identification and protection of wetlands and watercourses with conservation significance as a priority within its *Draft State Natural Resources Management Plan*.

On the basis of the above discussion, the Commission considers that South Australia is making satisfactory progress towards meeting its COAG commitment in this area.

### Public Education and Consultation

The Commission considers that South Australia has public education and consultation mechanisms in place in relation to the integrated management of water for environmental and other public benefit outcomes.

The water allocation planning process incorporates public consultation and education through public meetings and formal public comment periods upon the release of draft water allocation plans. This consultation process is established under the *Natural Resources Management Act 2004*.

The Commission considers that South Australia is making satisfactory progress towards meeting its COAG commitment in this area.

## 6.5.2 Water Recovery for Environmental Outcomes

### Assessment Issues

Where it is necessary to recover water to achieve modified environmental and other public benefit outcomes, South Australia has agreed to adopt the following principles for determining the most effective and efficient mix of water recovery measures:

- Consideration of all available options for water recovery, including investment in more efficient water infrastructure; purchase of water on the market, by tender or other market based mechanisms; investment in more efficient water management practices, including measurement; or investment in behavioural change to reduce urban water consumption
- Assessment of the socio-economic costs and benefits of



the most prospective options, including on downstream users, and the implications for wider natural resource management outcomes (eg. impacts on water quality or salinity), and

- Selection of measures primarily on the basis of cost-effectiveness, and with a view to managing socio-economic impacts

For the 2005 National Competition Policy assessment, the Commission will look for South Australia to have progressed with the recovery of water to support the objectives of The Living Murray and the implementation of the 'First Step' decision.

The Commission will also consider South Australia's water recovery efforts under The Living Murray Initiative in terms of their compliance with Council of Australian Governments water recovery principles, and community engagement and consultation.

**South Australia will contribute \$65 million over the next five years towards the \$500 million investment by partner governments in The Living Murray 'First Step' decision. South Australia intends to act primarily as an investor in water recovery projects, many of which will occur in New South Wales and Victoria, but will also investigate other water recovery opportunities, including direct water purchase from willing sellers.**

**South Australia's *Environmental Flows for the River Murray* strategy lists the following five actions (page 66) that the state will undertake to recover water for significant ecological assets under the 'First Step' decision.**

- identify opportunities in South Australia to obtain water savings from permanent wetlands, irrigation diversions and urban water users consistent with the Murray-Darling Basin Intergovernmental Agreement Business Plan
- identify decision-making criteria for South Australian investment in water recovery proposals arising from The Living Murray Initiative
- develop an investment strategy for The Living Murray water recovery projects
- develop water recovery proposals and investment packages for presentation to the Murray-Darling Basin

**Ministerial Council, and**

- implement The Living Murray water projects as agreed for funding.

**In terms of progress against these actions, South Australia is currently developing The Living Murray South Australian Water Recovery Package for consideration by the Murray-Darling Basin Ministerial Council. The package takes into consideration indicative targets detailed in the *Living Murray Business Plan* (MDBC, 2005a). This process will identify a number of opportunities for water recovery and consider the investment required to deliver the package.**

**In addition the strategy establishes the role of the (South Australian) Murray River environmental manager within the newly formed South Australian Murray-Darling Basin Natural Resources Management Board. The environmental manager will oversee environmental flow decisions and actions and work with the community to determine state-based environmental water initiatives.**

**Individuals and organisations are encouraged to support the work of the environmental manager by donating water for the environment, to be applied to sites prioritised on the basis of community values and the best available science. To encourage environmental water donations, the South Australian Government has introduced regulations to the *Natural Resources Management Act 2004* to remove establishment and transfer fees for environmental water licences; establish a scheme of differential levy refunds paid under the Act where water has been donated to an accredited environmental licence; and exempt environmental water donations from stamp duty where applicable**

## Discussion and Assessment

**South Australia has established its strategy for achieving water recovery for significant ecological assets under The Living Murray's 'First Step' decision. This is communicated within *Environmental Flows for the River Murray*. The actions for achieving water recovery for significant ecological assets are clearly identified, with a number due for completion during 2006.**

**Despite having not invested in any water recovery projects at the time of this National Competition Policy assessment,**

the Commission considers that South Australia will develop timely water recovery proposals and investment packages, in line with its action timetable.

For the purpose of this assessment, the Commission considers that South Australia has made satisfactory progress towards meeting its COAG commitment in this area.

## 6.6 Water Resource Accounting

### 6.6.1 Benchmarking of Accounting Systems

#### Assessment Issue

The Commission is looking for South Australia to be actively engaged in the national benchmarking of jurisdictional water accounting systems by June 2005, to allow for the development of a national framework for comparison of water accounting systems to encourage continuous improvement leading to the adoption of best practice.

**South Australia is involved in a national process to benchmark water accounting systems. Through this process, South Australia has committed to provide full access to their existing water accounting and entitlement registry systems and to other relevant water databases.**

#### Discussion and Assessment

**The Commission considers that South Australia is satisfactorily progressing its COAG commitment to benchmark existing water accounting systems.**

### 6.6.2 Consolidated Water Accounts

#### Assessment Issue

South Australia is to identify situations where close interaction between groundwater aquifers and streamflow exist by the end of 2005, to support the integration of accounting for groundwater and surface water use.

**South Australia does not consider groundwater-surface water interaction a significant issue in the state, other than in some areas of the Mount Lofty Ranges and the Flinders Ranges. Technical work is currently underway to assess the extent of interaction in the Mount Lofty Ranges, to allow for the integration of groundwater and surface water sources into the assessment of the capacity of water resources in**

**the region. South Australia's current licensing system—the Water Information and Licensing Management Application—provides water licensing accounting. South Australia is engaged in a national process to develop accounting system standards and guidelines that will be applied to this system.**

#### Discussion and Assessment

**The Commission notes the South Australian advice that there is only a small volume of water subject to close groundwater surface water interaction, and that the state has commenced a process to incorporate the management of connected systems.**

**For this assessment, the Commission considers South Australia is satisfactorily progressing its COAG commitments to consolidated water accounts.**

### 6.6.3 Environmental Water Accounting

#### Assessment Issue

The Commission is looking for South Australia to have commenced the development of:

- a compatible register of new and existing environmental water, showing all relevant details of source, location, volume, security, use, environmental outcomes sought, and type, and
- annual reporting arrangements to include reporting on the environmental water rules, whether or not they were activated in a particular year, the extent to which rules were implemented and the overall effectiveness of the use of resources in the context of the environmental and other public benefit outcomes sought and achieved.

**South Australia's environmental water allocations are currently recorded in its licensing system, the Water Information and Licensing Management Application. South Australia is engaged in the national process to develop and adopt characteristics for compatible environmental water registers and principles for environmental water accounting.**

#### Discussion and Assessment

**The Commission considers that South Australia is satisfactorily progressing its COAG commitment to environmental water accounting.**

## 6.6.4 Reporting

### Assessment Issue

The Commission expects South Australia to be engaged in a process to develop national guidelines covering the application, scale, detail and frequency for open reporting, addressing:

- metered water use and associated compliance and enforcement actions
- trade outcomes
- environmental water releases and management actions, and
- availability of water access entitlements against the rules for availability and use.

**South Australia is currently participating in the national process to develop national water accounting and reporting guidelines. South Australia will then develop reporting arrangements that are consistent with these guidelines.**

### Discussion and Assessment

**The Commission considers that South Australia is satisfactorily progressing its COAG commitment to develop national guidelines for reporting water use and management information.**

## 6.7 Urban Water

### 6.7.1 Demand Management

#### Assessment Issues

The Commission will assess:

- whether South Australia has implemented the Water Efficiency Labelling and Standards Scheme, including mandatory labelling and minimum standards for agreed appliances, and are undertaking compliance monitoring; and
- the extent to which the implementation of the Water Efficiency Labelling and Standards Scheme has been actively communicated to consumers.

The Commission will also look for South Australia to report on progress with the review of water restrictions and the implementation of management responses to supply and discharge system losses.

### Implementation of the National Water Efficiency Labelling and Standards Scheme

**South Australia supports the Water Efficiency Labelling and Standards Scheme but is only now in the process of preparing a draft bill, which was planned to have been debated by the South Australian Parliament during 2005. Within South Australia, there is little manufacturing of water-using appliances solely for intrastate trade, hence the application of the proposed South Australian Water Efficiency Labelling and Standards legislation will be limited.**

**As per the Water Efficiency Labelling and Standards agreement under the Environment, Protection and Heritage Council, the Commonwealth will lead the development and implementation of the scheme, including education and awareness of the new scheme, and a communications and marketing strategy.**

### Review of Water Restrictions and Implementation of Management Responses

**The success of the temporary water restrictions and the positive response from the public has led to the introduction of permanent water conservation measures; these were introduced by the government in October 2003. Water consumption trends are under regular review by SA Water. Rainwater tanks on new dwellings and extensions will be mandatory by July 2006 throughout the state except north of Port Augusta.**

### Water Supply and Discharge System Losses

**By international standards, Australian urban water utilities are among the international leaders in leakage management. According to the infrastructure leakage index (the internationally recommended basic standard terminology for calculating supply system water losses), SA Water, a statewide supplier of urban water, performs well with an index value of 1.2.**

**SA Water continues to actively pursue leakage reduction. Pilot field tests were conducted in 2003–04 to assess the viability of establishing an ongoing leakage reduction programme. Implementation of this programme should be in place by the end of 2006. In 2004–05, alternative, large-scale detection and remediation methods were undertaken. A mains management policy has also been drafted, including reference to leakage and pressure management.**

## Discussion and Assessment

The Commission notes that South Australia has not yet met its COAG commitments in relation to the national Water Efficiency Labelling and Standards Scheme. The review of water restrictions and the implementation of management responses to supply and discharge system losses are ongoing actions.

### 6.7.2 Innovation and Capacity Building to Create Water Sensitive Australian Cities

#### Assessment Issues

The Commission will assess whether South Australia has:

- developed and applied national health and environmental guidelines for recycled water and stormwater
- commenced a process to evaluate existing 'icon' water sensitive urban developments to identify knowledge gaps and lessons for future strategically located developments, and
- undertaken adequate public consultation and education as part of these commitments.

#### Recycled Water and Stormwater Guidelines

The Natural Resources Management Ministerial Council has released draft national guidelines on water recycling for public comment. The purpose of these guidelines is to create a risk management framework to support the use of treated wastewater, grey water and stormwater.

#### Evaluation—'icon' Water Sensitive Urban Developments

Examining icon developments will be considered in the context of reforms developed through the Urban Stormwater Initiative, Water Proofing Adelaide, the Metropolitan Planning Strategy, and the availability of funds through the National Water Initiative.

## Discussion and Assessment

The Commission notes that South Australia has a number of initiatives in place to encourage and facilitate the adoption of water sensitive urban design. There is some evidence that processes to implement these approaches or evaluate existing 'icon' water sensitive urban developments have been initiated. The Commission considers that South

Australia has made some progress towards meeting its COAG commitments in the innovation and capacity building for water sensitive cities.

## 6.8 Community Partnership and Adjustment

### Assessment Issues

The Commission will be examining South Australia's public consultation and education arrangements for consistency with its COAG obligations, for all aspects of the COAG water reform agenda. Particular assessment items are identified under each relevant section of this assessment framework.

With regard to addressing adjustment issues, the Commission will be looking for South Australia to demonstrate its commitment to close engagement with affected parties on possible responses, including consideration of, at least, the factors outlined in paragraph 97(i) of the National Water Initiative.

### Public Consultation and Education Arrangements

South Australia has consulted publicly on a range of water reform matters. Previous sections of this assessment detail South Australia's consultation and education initiatives in relation to water resource planning, water pricing, environmental water and urban water. In summary:

- Natural Resources Management Boards under the *Natural Resources Management Act 2004* are responsible for liaising with the community and stakeholder groups both before the decision to prescribe an area is made, and also during the development of a water allocation plan. These boards ensure that social and economic issues are addressed in prescription and water planning processes.
- All water plans, including the *State Water Plan 2000* and water allocation plans, must be reviewed at least once every five years in accordance with the *Natural Resources Management Act 2004*. Natural Resources Management Boards are required to conduct considerable community consultation during the review of water allocation plans.
- Regional Natural Resources Management Boards are required to report annually to the Minister for Environment and Conservation on the extent to which

it is implementing its water allocation plans, including the extent to which implementation of the plan has succeeded in achieving the objects of the *Natural Resource Management Act 2004*.

- In conducting its pricing processes inquiries, the Essential Services Commission of South Australia is not required to hold public meetings, public seminars or workshops. However, it may receive and consider any written submissions as it thinks appropriate and it must advertise to call for written submissions to be lodged no later than 14 days from the date of publication of the Notice of Inquiry.

#### Adjustment Issues

South Australia's water allocation review process allows the Minister for Environment and Conservation to vary a water licence (including the allocation, or the basis of allocation or the conditions) to make it consistent with the relevant water allocation plan. Additionally, the minister may reduce water allocations at any time if water quality or quantity, or the dependent ecosystems, are affected or likely to be affected. South Australia reported to the Commission that adjustment issues in relation to such reductions in water allocations will be different in each circumstance, and only once water allocation plans are reviewed and the implications of such reductions made clear, can they be addressed.

#### Discussion and Assessment

The *Natural Resources Management Act 2004* prescribes a detailed process for consulting the community on water reform issues. The Commission notes South Australia's progress on this matter. However, consistent with its findings in relation to water planning, the Commission considers that South Australia could improve the transparency of the trade-offs between consumptive users and the environment underpinning water allocation plans. Similarly, the Commission considers that South Australia needs to improve its level of transparency and degree of public consultation and education regarding the costs associated with resource management activities.

While South Australia provided little information on its processes for managing adjustments to water access entitlements, where needed, the Commission nevertheless

understands that the South Australian government has been able to work with water licence holders to effectively reduce entitlements when this has been required by the condition of the resource.

The Commission considers that South Australia has made satisfactory progress towards meeting its COAG commitment in this area.

## 6.9 National Water Quality Management Strategy

### Assessment Issues

The Commission is looking for South Australia to demonstrate continued and active implementation of the National Water Quality Management Strategy (NWQMS). In undertaking this assessment, the Commission will be guided by the expectations identified in the 2001 paper on implementation and the approach taken in previous National Competition Policy assessments.

The Commission will consider the extent to which the implementation of other water reform commitments recognises and gives effect to the NWQMS.

The 2005 National Competition Policy assessment will consider South Australia's implementation of guidelines that have been finalised since the last assessment.

The Commission also expects South Australia to report on its progress in water quality monitoring, including its implementation of the recommendations of a number of related reviews.

### Implementation

In 2001 South Australia agreed to a two-yearly review of its implementation of NWQMS guidelines. The 2003 National Competition Policy assessment examined South Australia's progress during this timeframe, finding that South Australia was making satisfactory progress in implementing policies that reflect the NWQMS framework.

South Australia implements the NWQMS framework through the Environment Protection (Water Quality) Policy 2003. This policy, which is a statutory instrument under the *Environment Protection Act 1993*, came into operation on 1 October 2003. It applies to all inland surface water, groundwater, and marine waters. It covers a range of issues,

including:

- establishment of protected environmental values and water quality objectives
- management and control of point and diffuse sources of pollution
- obligations relating to particular activities, and
- water quality criteria, discharge limits and listed pollutants.

South Australia's recent activities under the Environment Protection (Water Quality) Policy 2003 include the following:

- the Environment Protection Authority is developing the *Port Waterways Water Quality Improvement Plan* (EPA, 2005), which identifies environmental values and water quality objectives in consultation with the community. At the time of this National Competition Policy assessment, the plan had identified specific environmental values and water quality objectives for various sections of the Port River
- the Environment Protection Authority is currently undertaking a catchment risk assessment of pollutants entering the Murray River. A catchment risk assessment is planned for the Mount Lofty Ranges watershed and for Gulf St Vincent
- there are three main sources of nutrients entering the Port Waterways, and these cause algal blooms. Two of these are from sewage and the third is from a major industry that discharges ammonia. A decision-support tool has been used to determine sustainable loads from these main point sources
- one of the sewage treatment plants has ceased discharging into the Port River. Load reductions are being negotiated with the other main polluters to reduce loads to sustainable levels over time, and
- ambient water quality monitoring is continuing across the state including the Port River.

State of Environment reporting, and reporting on statutory regional natural resource management plans, will be used to report on the effectiveness of actions taken to achieve water quality objectives under the Environment Protection (Water Quality) Policy 2003.

#### Water Reform Commitments

The *Natural Resources Management Act 2004* requires all regional natural resource management plans to be consistent with the Environment Protection (Water Quality) Policy 2003. For example, regional water management planning should be based on environmental values, as advocated in the NWQMS, and identified by the community and government.

The *Draft State Natural Resources Management Plan* expects regional Natural Resource Management Boards to seek assistance from the Environment Protection Authority to ensure future planning activities are consistent with the Environment Protection (Water Quality) Policy 2003.

#### Implementation of NWQMS Guidelines

The Environment Protection (Water Quality) Policy 2003 uses codes of practice and guidelines to describe how a person undertaking a particular activity can comply with their general environmental duty. South Australia adopts NWQMS guidelines as a basis for these codes and guidelines, but makes some variations to meet local requirements.

The Environment Protection Authority has used the *Guidelines for Sewerage Systems – Sewerage System Overflows* (ANZECC & ARMCANZ, 2000b) to develop the *Draft Code of Practice for Wastewater Overflow Management: For Public Consultation* (EPA, 2003) that can be enforced through the Environment Protection (Water Quality) Policy 2003. It is expected that this draft code of practice will be finalised in 2006.

#### Water Quality Monitoring

South Australia has instituted reviews of water monitoring at statewide, regional and catchment scales. All reviews are coordinated through the State Water Monitoring Coordinating Committee.

The status of current reviews at the regional and catchment scale is set out in Table 6.2 below. The integrated water monitoring review of the Northern Adelaide and Barossa Catchment Area has already been completed.

Region/Catchment	Status
East Mount Lofty Ranges	Final draft went to SWMCC 7-12-2005
West Mount Lofty Ranges (Onkaparinga)	Final draft went to SWMCC 7-12-2005
West Mount Lofty Ranges (Torrens)	Final draft went to SWMCC 7-12-2005
West Mount Lofty Ranges (Patawalonga)	Final draft went to SWMCC 7-12-2005
Northern and Yorke Agricultural Districts	Final draft went to SWMCC 7-12-2005
Alinytjara Wilurara region	Final draft went to SWMCC and AWRMB August 2005
Eyre Peninsula	Final draft went to SWMCC 7-12-2005
Kangaroo Island	Initial drafts currently in development, will go to KINRMB Jan 2006
Southern Fleurieu Peninsula	Initial drafts currently in development, due on March 2006

Notes: SWMCC = State Water Monitoring Coordinating Committee; AWRMB = Alinytjara Wilurara Natural Resources Management Board; KINRMB = Kangaroo Island Natural Resources Management Board.

At the state level, the Environment Protection Authority conducted an internal review of the ambient water quality monitoring programme in 2003, which resulted in a number of changes in, and expansion of, the previous programme. The state government committed an additional \$370,000 per annum to the programme. The additional funding supported increased monitoring to include additional rivers and streams, aquifers under stress, and an expansion of the marine monitoring programme. The additional government funding also supported two additional scientific officers to undertake water quality assessment work associated with the programme.

Reports on the ambient water quality monitoring programme are published on the Environment Protection Authority website ([www.epa.sa.gov.au](http://www.epa.sa.gov.au)). The programme has since been reviewed, and is now being internally reviewed, before being subjected to external peer review.

## Discussion and Assessment

South Australia has demonstrated continued implementation of the key elements of the NWQMS through the Environment Protection (Water Quality) Policy 2003.

South Australia has incorporated the NWQMS into its latest Natural Resource Management planning arrangements; the

*Draft State Natural Resources Management Plan* requires all regional natural resource management plans to be consistent with the Environment Protection (Water Quality) Policy 2003.

South Australia actively incorporates NWQMS guidelines into codes of practice and guidelines under the Environment Protection (Water Quality) Policy 2003.

South Australia has reported on its progress in statewide, regional and catchment scale water quality monitoring since the 2003 National Competition Policy assessment. Seven regional and catchment water monitoring reviews are nearing completion, while the integrated water monitoring review of the Northern Adelaide and Barossa Catchment area is already complete.

At the statewide level, South Australia's ambient water quality programme has been revised in light of a review completed in 2003. Following the review, the programme expanded from 150 to around 300 monitoring sites located across the state.

On the basis of the above discussion, the Commission considers that South Australia has made satisfactory progress towards meeting its COAG commitment in this area.

# TASMANIA





# TASMANIA

## 7.1 Implementation

### Assessment Issue

The Commission is looking for Tasmania, as a signatory to the National Water Initiative, to have completed its National Water Initiative Implementation Plan.

**One task of the National Water Commission is to accredit jurisdictions' implementation plans to ensure consistency with the agreed implementation timetable for the National Water Initiative (COAG, 2004a).**

**Tasmania signed the National Water Initiative in June 2005. Within one year of signing the National Water Initiative, jurisdictions are obliged to provide the Commission with an implementation plan that clearly identifies the steps it will take to implement the National Water Initiative.**

**At the time of this assessment, Tasmania has not provided the Commission with a draft of its implementation plan, and the Commission is working with Tasmania to progress it. Once received, the draft plan will be assessed by the Commission and comments will be provided to Tasmania on how the implementation plan could be improved for it to be considered for accreditation.**

### Discussion and Assessment

**The timetable for Tasmania completing an implementation plan and having it assessed and accredited by the National Water Commission has been revised. Tasmania had originally agreed to provide an implementation plan, incorporating the Commission's comments, to the Commission by late 2005. The National Water Commission is expected to consider plans for accreditation early in 2006.**

**Apart from a completed implementation plan, the other requirements for this section in the 2005 National Competition Policy Assessment Framework do not apply to Tasmania as it has no shared resources or cross-jurisdictional agreements.**

**Overall, the Commission considers that Tasmania is making satisfactory progress towards its COAG commitment against this assessment item.**

## 7.2 Water Access Entitlements and Planning Framework

### 7.2.1 Water Access Entitlements

#### Assessment Issues

The Commission is seeking detailed information from Tasmania with regard to its current arrangements for the provision of water access entitlements. The Commission is looking for Tasmania to:

- have completed the conversion of water access entitlements to entitlement systems in line with the principles and timeframes of its 1994 Water Reform Framework commitment
- demonstrate the commencement of incorporation of the National Water Initiative water access entitlement requirements into its legislative and administrative regimes. The Commission is also interested in the extent to which Tasmania's water access entitlements are consistent with the National Water Initiative access entitlement framework
- have made significant progress in the development of compatible, publicly accessible systems for registering water access entitlements and trades, including recognition of third party interests (such as the interests of financial institutions), and
- report on the public consultation and education processes in place for the introduction or review of entitlement regimes.

**The Tasmanian Government has legislated to establish systems of water entitlements under the provision of the *Water Management Act 1999*.**

#### Water Licences and Water Allocations

**With the commencement of the *Water Management Act 1999* on 1 January 2000, common law rights to naturally occurring water were abolished. The taking of water for any use, other than that specified in Part 5 of the *Water Management Act 1999*, now requires a water licence and an association water allocation.**

Under Part 5 of the *Water Management Act 1999*, specified users may take water without needing a licence:

- riparian landowners, as well as casual users of land, may take water from watercourses and lakes for human consumption, domestic purposes, stock watering and firefighting ('riparian rights'), or
- occupiers of land may take surface water (water not flowing in a watercourse) and groundwater from that land for any purpose; however, where a water management plan is implemented or a groundwater area has been proclaimed, the taking of groundwater may be subject to licensing arrangements.

These rights are maintained only if taking the water does not lead to material or serious environmental harm, or contravene the provisions of an applicable water management plan<sup>1</sup>.

For all other uses (not in a specified irrigation area), water resources in Tasmania are allocated as water licences with an associated water allocation.

Water licences entitle holders to take water. Water licences:

- are legally separate from land title
- are specified in volumetric terms
- are transferable
- indicate the reliability of the water allocation, and
- are issued for ten years, with a presumption of renewal as long as it complies with provisions under the *Water Management Act 1999*.

This water entitlement is not 'perpetual' but is widely recognised in Tasmania as 'ongoing'.

While water licences and allocations are granted for a specified period of time, section 80(2) of the *Water Management Act 1999* provides that a licensee can apply to have a licence or allocation (or both) automatically renewed, provided several conditions are met (ie. the applicant has complied with previous licence conditions, renewal is consistent with the objectives of the *Water Management Act 1999*).

Water allocations specify the amount of water that can be taken under a water licence and the purpose for which the water may be used. Under the *Water Management Act 1999*, a water allocation is firstly established and then attached to an existing licence. This means that a person must hold a current water licence to be able to obtain a water allocation, although a water licence may have more than one water allocation attached to it.

The *Water Management Act 1999* does not require the water or the licensed water allocation to be specified as a share of the resource. Tasmania considers that this is not practical in its unregulated river systems, where the size of the consumptive pool changes with natural streamflow.

Water allocations may enable the licensee to take water for a whole year, or seasonally. For example, there are allocations for the right to take water from a watercourse for direct use during the 'summer' period (November to April), and there are allocations for the right to take water from a watercourse into a dam during the 'winter' season (May to October). For the majority of streams in Tasmania, no further water allocations for taking water during summer are being granted because the streams are considered fully allocated. Any further water allocations for the summer season would be considered only as a temporary allocation after environmental flow requirements are expected to be readily met, or in the context of a water management plan.

Limits on water allocations are determined for each catchment. Sustainable water allocation limits are determined through the water management planning process and currently apply in two catchments where a finished plan exists.

In areas with no water management plan, a precautionary approach to setting limits on water development within a catchment is used; it is called total available yield. Total available yield is the volume of water available during the winter period (May to October inclusive) for allocation at 80 per cent reliability after consideration of the environmental water allocation.

<sup>1</sup> Environmental harm is defined in Clause 5 of the *Environmental Management and Pollution Control Act 1994*

### Irrigation Rights

Under the *Irrigation Clauses Act 1973*, irrigation districts have a system of irrigation rights. Each irrigation right has an associated water allocation and it is held by an individual water user.

Water rights are distributed to users by an irrigation district operator, who is allocated a water entitlement under the *Water Management Act 1999*.

These irrigation rights are separate from land title and are transferable within the district. It is not necessary for the holder of an irrigation right to be an owner or occupier of land in the irrigation district. There is also no longer a requirement for the holder of an irrigation right who no longer owns or occupies land in the district to transfer the right within six months or forfeit it.

### Other

Occupiers of land may harvest overland flow and extract groundwater for any purpose subject to rules under a water management plan.

Under the *Water Management Act 1999*, a dam permit is generally required for the construction of all dams, other than those not on a watercourse and of less than one megalitre capacity. A water licence is required to store and use the water in the dam.

A landowner or occupier may take groundwater for any purpose without a licence unless, (1) they are required to under a water management plan for that area; or (2) they are in a proclaimed groundwater area.

At the time of the 2004 National Competition Policy assessment (NCC, 2004b), the Department of Primary Industries, Water and Environment was developing management rules to ensure the equitable and sustainable use of groundwater in proclaimed areas. To date, Tasmania has not announced and proclaimed groundwater areas within the state. Nevertheless, the Great Forester, Mersey, River Clyde and Lakes Sorell and Crescent, and Little Swanport Water Management Plans all include provisions relating to the equitable management of groundwater, including the implementation of a groundwater usage register, with some licensing.

The *Water Management Act 1999* sets priorities for

restricting the taking of water allocations as water availability decreases. There are six surety levels associated with water allocations, each one corresponding to a level of security of access. Restrictions on taking water for different uses are determined based on these levels. Allocations for purposes such as stock and domestic or town water supply are given the highest level ('Surety 1'), while commercial purposes are given lower surety.

In practice, the higher the surety level, the earlier an allocation will be restricted. For example, 'Surety 6' irrigation allocations would be fully restricted in summer before any restrictions to 'Surety 5' allocations were implemented. The surety levels are listed below:

- Surety 1—allocations for domestic, public health and stock purposes, part of town water supplies, fire fighting
- Surety 2—needs of ecosystems dependent on the water resource
- Surety 3—allocations for irrigation converted from high surety rights issued under the previous *Water Act 1957*
- Surety 4—allocations on special licenses (such as Hydro Tasmania)
- Surety 5—normal allocations for commercial purposes, for example, irrigation, and
- Surety 6—lower surety allocations for commercial purposes.

The *Water Management Act 1999* provides for the establishment of special licences for large generators of electricity, such as Hydro Tasmania, and other major water users.

### Conversion of Water Access Entitlements

For the 2004 National Competition Policy assessment, Tasmania had completed the process of converting to its new system of licences and allocations, with the exception of:

- Hobart Water and Cradle Coast Water bulk entitlements
- Burnie Council town water supply, and
- a small number of conversions of previous perspective rights to licences and allocations under the Act for which the registered owner of the right cannot be located.

The changeover arrangements from the previous licensing system to the new system preserved pre-existing legal entitlements to water where they were sustainable. The Act allows the minister to vary the conditions or reduce the allocation of a licence, or impose restrictions on the taking of water as necessary to meet environmental requirements.

Following the enactment of the *Water Management Act 1999* in January 2000, Tasmania started a process of converting existing water access entitlements to new water licences that are quantified and tradeable.

Commissional water rights, granted under the *Water Act 1957*, covered the majority of commercial water users in the state. Most commissional water rights have been converted to water licences under the *Water Management Act 1999*, apart from some properties for which the owner cannot be traced. The process also included the conversion of the water rights of Hydro Tasmania into a water licence.

Water access entitlements previously defined under other Acts, for example, council rights to take water for urban supplies under the *Local Government Act 1993*, have now all been converted to licences under the *Water Management Act 1999*. This includes new water licences granted as bulk entitlements to the northwest (Cradle Coast Water) and northern (Esk Water) bulk suppliers.

Legal advice sought by the Tasmanian Government indicated that Hobart Water's entitlements were unclear. This was a result of an administrative oversight in 1997, when water entitlements of the former Hobart Regional Water Board were transferred from state to local government. Amendments to the *Water Management Act 1999* have been made to provide retrospective savings provisions for legal water entitlements for Hobart Water. The amendments have provided Hobart Water with a licence under Part 6 of the *Water Management Act 1999* with the same conditions as in the repealed Hobart Regional Water Act 1984, preserving their pre-existing water entitlements. Negotiations are currently underway with Hobart Water about the revised terms and conditions of its licence.

Tasmania has stated that previous prescriptive rights under the *Water Act 1957* have also mostly been converted to licences and allocations under the *Water Management Act 1999*. The exceptions are the small number of cases in which

the registered owner of the right cannot be located.

Following amendments to the *Water Management Act 1999* in 2004, the Rivers and Water Supply Commission now has water licences that cover all of its irrigation and water supply schemes.

When converting licences to the new water access entitlement system, licence conditions may vary, the allocation may be reduced, or restrictions may be imposed on water extractions to meet environmental requirements.

#### Compatible Entitlement Register

Under the *Water Management Act 1999*, the Minister is required to keep a register of water licences and permits, which involves notification of third-party interests in a water licence or allocation. To facilitate trading and make licensing information publicly available, the Tasmanian Government established the Water Information Management System (WIMS).

WIMS is a public water licence register with details of all water licences and associated water allocations and dam permits. The register also contains details of third-party interests; there are statutory provisions in the *Water Management Act 1999* to ensure that parties with financial interests are identified and that consent is sought before transfers are approved.

Tasmania has recently started to review its water register system and determine potential linkages with land title registration procedures and protocols. The project will also draw on the work of the Natural Resource Management Ministerial Council on compatible registers. In future activities for water access entitlements, Tasmania plans to ensure that the requirements for water registers under the National Water Initiative are met, where cost-effective.

Tasmania is committed to developing nationally compatible registers for water access entitlements through an intergovernmental working group under the Natural Resources Management Ministerial Council. Please see Section 7.3 on Water Markets and Trading for more detail.

### Public Consultation and Education

The public consultation and education processes for the introduction and review of entitlement regimes in Tasmania include:

- the 2005 review of the *Water Management Act 1999*
- consultation communication and meetings with stakeholders about proposed legislative amendments, regulations, policies, and guidelines, including opportunities for public submissions, and
- public and stakeholder meetings about the development of water management plans and changes to the Water Use Sustainability Project.

For Tasmania, water management planning provides the basis for community involvement in establishing entitlement regimes at a catchment scale. Tasmania considers the consultation process allows environmental and socio-economic objectives to be established for a catchment. It also improves community acceptance of any proposed legislative amendments to the planning process.

### Discussion and Assessment

In previous National Competition Policy assessments, Tasmania was found to have established a comprehensive system of water entitlements separated from land title and specified in volumetric terms, as is consistent with its commitment in the 1994 COAG Water Reform Framework. Additionally, licensing arrangements have been extended to areas where groundwater use is not sustainable.

Tasmania has not converted all water access entitlements to water licences, but it has demonstrated progress towards completion. Since the 2004 National Competition Policy assessment, a water licence bulk entitlement has been issued to Cradle Coast Water and Esk Water, and consultation is occurring for Hobart Water.

Tasmania maintains a register of water licences, which includes provision for registering financial interests. The Commission notes Tasmania's participation in the cross-jurisdictional working group for developing compatible registers for entitlements.

Tasmania has reported on the public consultation and education processes in place for the introduction of its new water licence regime. These processes have been

widespread and have provided opportunity for community input to management arrangements.

The Commission is satisfied that Tasmania has made significant progress towards meeting its COAG commitments for water access entitlements. The Commission urges Tasmania to move quickly to finalise the Hobart Water water licence bulk entitlement in order to meet its COAG commitments.

## 7.2.2 Environmental and Other Public Benefit Outcomes

### Assessment Issues

The Commission is looking for the Tasmanian Government to have commenced the process to incorporate the National Water Initiative architecture for the provision of water for environmental and other public benefit outcomes into its water entitlement, planning and management arrangements.

The *Water Management Act 1999* requires that water management plans include objectives relating specifically to the environment in its statement of the objectives of the plan.

Under the *Water Management Act 1999*, the Minister must approve any application for a water licence that could not reasonably be expected to lead to material environmental harm or serious environmental harm. As discussed earlier, limits on water allocations are determined for each catchment through either sustainable water allocation limits through the water management planning process, or by determining the total available yield in areas with no water management plan. Both of these take into account environmental requirements.

In Tasmania, environmental water needs are defined using a scientific method. For systems with low water demand, environmental water needs are determined through a desktop hydrological study using percentile estimates of environmental water requirements of catchments within the same region. For systems with higher water demand, a more detailed assessment is carried out. A range of tools are used with a risk-based approach to negotiate the provision of environmental water within the water management planning process.

An environmental water requirement is the water regime required to sustain the ecological values of an aquatic ecosystem at a low level of risk. In systems that are not fully allocated and that have no conflict between environmental needs and consumptive user needs, the full environmental water requirement is adopted. Due to the unregulated nature of Tasmania's rivers, this environmental water is generally provided through a rules-based approach.

In systems that are stressed, a water provision for the environment is adopted. A water provision for the environment is a portion of the water requirement for the environment that is to be met in a system under planning arrangements. Water provisions for the environment are adopted as an agreed outcome of a water management plan, in which values are identified for not just the environment, but also for water use and development, water management, and recreational and commercial activities within the plan area. These interests and local concerns are obtained through consultation with local stakeholders. Water provisions for the environment are categorised based on the level of risk to the environment.

Provisions for environmental flows may be incorporated into specific water licences—these are agreements between the Department of Primary Industries, Water and Environment and users of a large volume of water. For example, the agreement with Hydro Tasmania includes provisions for environmental flows that are a necessary requirement of Hydro Tasmania's operations and are not subject to compensation claims by the licence holder. Under the agreement, environmental water provisions are to be investigated and implemented as part of statutory water management plans.

The Tasmanian Government has identified a number of statutory instruments and other documents listed in the *Generic Principles for Water Management Planning* (DPIWE, 2005a), which guide the establishment of the environmental objectives for water management plans. These include:

- the *Water Management Act 1999*
- protected environmental values and water quality objectives established under the State Policy on Water Quality Management 1997
- resource condition targets for, and monitoring information provided by, the regional natural resource management strategies
- conservation priorities established by the Conservation of Freshwater Ecosystems Values Project, and
- other river health information, particularly the data provided to support Tasmania Together (Tasmania's system for the community to set goals and measure progress).

Tasmania expects to establish in the future, a process to ensure the provisions for water for environmental and other public benefit outcomes are reviewed and where appropriate, amended to incorporate any National Water Initiative architecture.

## Discussion and Assessment

For this assessment, Tasmania was to have started the process to incorporate the National Water Initiative architecture for the provision of water for environmental and other public benefit outcomes into its water entitlement, planning and management arrangements.

The *Water Management Act 1999* provides a framework for incorporating environmental objectives into planning and management of the environment. Most of the specifications for the environment are developed through planning processes, which are guided by a set of management principles.

The Commission notes that the method for determining the environmental needs of a system with low water demand is based on desktop hydrological studies.

The Commission notes that existing consumptive use continues to be a major consideration in allocating water for the environment. In stressed systems, although the method for determining the environmental water reserve is adequate, existing consumptive use is maintained in preference to allocating the full environmental water requirement. Allocations are determined in consultation with the community.

Tasmania is currently participating in the national process to develop principles and procedures for environmental water accounting, which are discussed further in Section 7.6 on Water Resource Accounting.

The Commission considers that Tasmania has met its COAG commitments in this area.

### 7.2.3 Water Planning and Addressing Currently Overallocated and/or Overused Systems

#### Assessment Issues

In considering governments' arrangements for allocating water to the environment, in light of guidance provided by the 1994 COAG Water Reform Framework, the ARMCANZ/ ANZECC National Principles and the National Water Initiative, the Commission will expect the Tasmanian Government to establish arrangements that:

- are based on the best available science and use strategic and applied research (principles 2 and 11)
- achieve a balance between environmental needs and human use that provides the water needed to achieve the environmental outcomes, while recognising, in systems where there are existing users, the existing rights of those users (principles 1, 4, 5, 6 and 9)
- involve monitoring and adaptive management where the regular assessment of ecosystem health guides water management processes (principle 8), and
- involve stakeholder consultation and transparent processes that are robust, and ensure the timely provision of relevant information to all interested parties (principles 7 and 12).

The Commission is seeking detailed information from Tasmania with regard to its current water planning arrangements, including the provision of water to the environment. In particular, the Commission will be carefully scrutinising Tasmania's progress in meeting its commitments regarding the overallocated and/or stressed river and groundwater systems. The Commission will be looking for the Tasmanian Government to:

- demonstrate how its water management plans (and related arrangements) address the obligations in the 1994 Water Reform Framework and take account of the ARMCANZ/ ANZECC National Principles, regarding the provisions of water to the environment. In particular, the Commission will be looking for Tasmania to have removed the non-environmental considerations from its process for estimating environmental flow volumes
- demonstrate that Water Management Plans are substantially complete for all surface water and groundwater systems identified in its 1999 implementation programme

- report on progress with the determination of overallocated and/or overused systems not covered by the 1999 implementation programme and the pathways being developed to address them
- if the water allocated for environmental purposes for particular river and groundwater sources is significantly different from that recommended by the best available science, demonstrate that this decision is based on a robust examination of the socio-economic evidence and taken in the context of an open and transparent community consultation process that makes explicit the tradeoffs
- demonstrate that an integrated catchment management approach has been adopted for the management of water and that planning processes and administrative arrangements reflect an integrated approach to natural resource management, and
- provide an overview of the public consultation and education processes in place and adopted for water planning and for addressing overallocated and/or stressed resources.

**The *Water Management Act 1999* provides the legal basis for Tasmania's water planning, allocation and entitlement frameworks, and gives effect to the policies regarding the allocation of water resources and water management plans to address issues of overallocation.**

**The main planning instrument that provides management for systems in Tasmania is the Resource Management and Planning System. This system, established in 1994, provides an integrated policy and a statutory and administrative framework for the pursuit of sustainable development in Tasmania. Building on existing state legislation, the system establishes a whole-of-government, industry and community approach to resource management and planning. The system is concerned with the use, development, conservation and protection of land, water and air.**

**Under the Resource Management and Planning System, strategic planning occurs in an integrated way at state, regional and local levels. The system is designed to simplify and streamline the approvals process, create surety for land managers, users and owners, and improve the quality of resource management and planning decisions. The system includes opportunities for public consultation and participation.**

Within the Resource Management and Planning System Framework, the *State Policies and Projects Act 1993* provides for the making of any state policies that may be required for setting and implementing provisions for the management of water resources. Additionally, this system draws together policies from various Acts to integrate the management of Tasmania's water and other natural resources.

The Natural Resource Management Framework (DPIWE, 2002) was developed in 2002 under the *Natural Resource Management Act 2002*, after extensive consultation with stakeholders. It covers issues such as administrative arrangements at the state and regional level, proposed legislation, natural resource management principles and priorities, and integration with existing relevant statutory and non-statutory instruments. The aim of this framework is to coordinate and integrate the wide range of entities that are involved in the management of natural resources across Tasmania. It is intended to build on existing processes to provide improved outcomes for natural resource management.

Three regional committees have been formed for the purpose of developing a regional natural resource management strategy for the North, South and North West regions of Tasmania. These strategies have been judged by the Australian Government as being developed in accordance with the National Action Plan for Salinity and Water Quality and the Natural Heritage Trust agreements and have set targets on a range of nationally-agreed matters. Regional strategies aim to build, where possible, on existing work and are developed to provide integrated natural resource management outcomes.

On 25 July 2005, the Australian and state governments accredited the three regional strategies as well as the regional investment proposals that will facilitate the implementation of the strategies. Water was identified as a key natural resource management asset and the three regional strategies provide a number of actions dealing with water management.

The Water Use Sustainability Project was initiated in 2003 to provide for sustainable water management in catchments identified as being at risk of overuse. The project aims to prevent over-extraction in catchments in advance of water

management plans, and to provide greater certainty of access entitlements for water users. The project seeks to quantify current irrigation water usage in each catchment and to monitor this usage for future sustainability of river systems. The project is also identifying water management protocols—such as restriction management—to sustain the environmental values of these catchments. The implementation of the Water Use Sustainability Project is taking longer than anticipated due to unanticipated legislative changes; it is now underway in most of the priority systems.

For the 1999 implementation program, Tasmania prioritised the assessment of environmental flows for all major rivers and streams across the state. The priorities for setting environmental flows were based on a matrix that considered the ecological status of the receiving estuary; water quality and riverine health; threatened species issues; existing water allocations; and predicted water development pressure. Stressed rivers were identified as those with the most water use priority relative to the available water.

A water management plan is implemented to provide environmental water in catchments that are more developed, approaching full allocation, or are stressed due to over-extraction. Tasmania has completed and implemented a water management plan for four of the 16 priority river systems nominated in its 1999 implementation programme.

Water management plans are the vehicle for controlling water allocations in Tasmanian catchments; this includes environmental allocations. Under the Water for Ecosystems Policy (DPIWE, 2001a), those rivers identified as being at risk of overuse in the 1999 implementation programme will have water management plans developed for them. Under the policy *Guidelines to Assess Applications for New Water Allocations from Watercourses During Winter* (DPIWE, 2003a), new allocations will be approved only if the total water taken stays within a conservative allocation limit for the catchment or subcatchment.

In the absence of a water management plan, the sustainable allocation limit is determined through a desktop process, using rules developed from the In-Stream Flow Incremental Methodology procedure, which calculates the total available yield. Further water allocations for these rivers have to be proven to not affect environmental water requirements



through an analysis funded by the applicant. The desktop process aims to protect baseflow environmental requirements and frequency and timing of high flow events by allocating at only 80 per cent reliability.

Since the 1999 implementation programme, six more systems have been added to the priority list of stressed systems as they have been identified as being at risk of over-extraction. Although Tasmania has identified these stressed systems that are at risk of overuse, there are no systems within the state that Tasmania has identified as overallocated.

In systems where there is over-extraction (users take more than their allocated entitlements), if the historical use of water is deemed necessary to underpin existing commercial investment, the water user is granted that additional water as a low level surety allocation, capped at 2002–03 usage levels, on the condition that a water meter(s) is installed.

Since 1995, Tasmania has maintained a moratorium on the issuing of summer water allocations in a catchment until the relevant environmental flow has been identified and implemented. This would normally occur through the development of a water management plan. For the identified stressed rivers, the procedure is to undertake a scientific assessment of environmental flow needs and then develop a water management plan that combines the environmental, economic and social demands on water.

In February 2005, the Department of Primary Industries, Water and Environment released the *Generic Principles for Water Management Planning*. Developed in consultation with stakeholders, the policy draws on the experience gained over the past five years in developing the first water management plan and provides clear guidance on the processes and principles to deal with issues that are expected to be common to most water management plans across Tasmania. These plans cover surface water and groundwater, and may include overland flow.

In 2002, Tasmania commenced the Conservation of Freshwater Ecosystems Values Project to identify and strategically manage the key natural values of the state's freshwater dependent ecosystems. The aim of the project is to give government, industry and the community confidence that conservation values are identified and appropriately

considered in the development and management of the state's water resources. The project achieves this by explicitly identifying natural ecosystem values at the state, bioregional, catchment and subcatchment scales.

In August 2001, Tasmania launched its *Water Development Plan for Tasmania* (DPIWE, 2001b). This plan is intended to identify water development opportunities that could be advanced to meet Tasmania's economic and social objectives. The plan analyses the current regulatory, administrative and industry structures for water in Tasmania and discusses issues, opportunities and constraints for water resource utilisation and management.

#### Provisions for the Environment

Tasmania has used the In-Stream Flow Incremental Methodology for a number of years, starting with a trial in 1995 by Davies and Humphries. This approach was developed in America during the 1970s and 1980s, initially for establishing the flow requirements in salmonoid streams of north-western America. Although it has developed considerably from these initial beginnings, it is essentially reliant on relationships between flow and resulting habitat. This model calculates the habitat at different flow levels at an individual point in the river. Tasmania uses a component of the In-Stream Flow Incremental Methodology to examine habitat availability for a suite of aquatic fauna under a range of flows. The habitat availability component of the methodology is applied in catchments where the flow regime is unregulated and higher flow components are not impacted by water use.

Although the In-Stream Flow Incremental Methodology has been extensively trialled in Victoria and Tasmania, Australian jurisdictions (unlike America) typically take a more holistic approach that is not focused on single in-stream species such as salmon. Consequently, approaches that take account of all elements of the flow regime (including inter-annual and intra-annual variability), and that can account for out-of-channel requirements (wetlands, floodplains) are favoured in Australia. Tasmania has adopted holistic approaches to determining environmental water requirements in catchments where flow regimes are regulated, and has completed six holistic environmental flow studies so far.

The 2004 National Competition Policy assessment noted limitations of the In-Stream Flow Incremental Methodology as it was applied to the Great Forester catchment. The 2004 assessment concluded that the model did not allow consideration of the end-of-system flows, the water requirements for the terminal wetland, or interactions between the surface water and groundwater systems. The Tasmanian Government has acknowledged the limitations of the In-Stream Flow Incremental Methodology approach for catchments where there are potential impacts beyond those on baseflows. The government has indicated that the Department of Primary Industries, Water and Environment is trialling an improved holistic method in the Little Swanport catchment, following a study commenced under the National Action Plan for Salinity and Water Quality in 2003.

Tasmania commenced development of catchment-specific hydrology models in some catchments for water allocation purposes in 2002. These models have now been completed in 13 of the systems prioritised in 1999, and a further 54 systems are being funded with Australian Government Water Fund assistance. Some 20 integrated groundwater-surface water models are also being developed. These models are essential for assessing the impact of developments on natural flow patterns and so this represents a significant step forward.

Tasmania has stated that scientific studies to determine minimum flow requirements have now been completed for 48 rivers, and has used these to establish trigger points for water restrictions and setting environmental flow provisions.

The environmental flows work undertaken to date on unregulated rivers has been concentrated on the high-stress period of the year during summer. The aim of this work is to support the provision of 'cease to take' provisions in water management plans, that is, to restrict water extraction and provide protection of base flows.

#### Entitlements

In Tasmania, use of water requires a water licence and associated water allocation, except for stock and domestic purposes. This includes entitlements for individual users and bulk entitlements for water supply scheme operators.

Previous assessments have raised concerns regarding Tasmania's approach to determining environmental

water requirements. Previously, Tasmania has built non-environmental trade-offs into its estimate of environmental flow, rather than focusing more directly on examining the volume and type of water needed to ensure the long-term health and viability of water systems. In relation to the development of the Great Forester Water Management Plan, the National Competition Council concluded that non-environmental trade-offs considered in estimation of environmental flow requirements were not transparent and did not involve adequate consultation with stakeholders and the community. Tasmania states that the amount of water provided to the environment is an outcome agreed through consultative processes that balances this calculated requirement with the economic and social benefits of water.

Since the Great Forester plan, Tasmania has modified its processes for developing water management plans and now includes consultation with stakeholders and the community when determining the environmental water provisions in a system.

As discussed earlier in Water Planning, under the policy *Guidelines to Assess Applications for New Water Allocations from Watercourses During Winter*, applications for new allocations in systems not covered by a water management plan will not be approved if the allocation results in the total water taken exceeding the calculated total available yield. Further water allocations will not be issued unless the applicant can prove that the new allocation will not affect environmental water requirements.

#### Water Management Plans

To date, four water management plans have been completed in Tasmania; the Great Forester River, the Mersey River, River Clyde and the Lakes Crescent and Sorell.

In 1999, Tasmania determined a list of 16 priority catchments for the development of water management plans. Since that time, five more plan areas have been added to the list due to risk of overuse. Instead of progressing water management plans for all of these systems, the Tasmanian Government has started other programmes to improve knowledge of the environmental conditions of the waterways in Tasmanian catchments; they may cover aspects of water management plans. Tasmania considers that monitoring so far indicates no adverse impacts on river health from current water use in these catchments.

An update on each system identified as a priority in 1999 and in following years is provided below. These systems are sorted into groups, as follows:

- systems looked at in detail in previous National Competition Policy assessments
- systems looked at in detail for the first time in this National Competition Policy assessment
- systems prioritised in the 1999 implementation programme, and
- systems prioritised since the 1999 implementation programme.

The Mersey River and Lakes Crescent and Sorell in conjunction with the Clyde River were examined in detail for the 2005 National Competition Policy assessment to assess Tasmania's approach to incorporating the 1994 COAG water reform framework and the ARMCANZ/ANZECC National Principles for the Provision of Water for Ecosystems into its management arrangements. These systems were selected because they had a water management plan implemented since the 2004 National Competition Policy assessment.

#### Previous National Competition Policy Assessment

##### *Great Forester River*

The Great Forester Catchment Water Management Plan was adopted on 30 July 2003 and subsequently amended to a minor extent pursuant to a decision by the Resource Management and Planning Appeal Tribunal on 11 November 2003. The local consultative group formed during the development of the plan has been retained to provide advice on any ongoing water management issues associated with the implementation of the plan.

The plan has been in effect since the 2003–04 irrigation season and two annual reviews of the plan have been conducted.

The Department of Primary Industries, Water and Environment has been working with water users to purchase and install meters for all Surety 5 and 6 direct takes in the catchment. Tasmania states that during 2004–05 some 80 meters were installed.

As it was the first adopted plan in Tasmania, lessons learned during the implementation of the Great Forester

Catchment Water Management Plan are being used to improve the process for developing and implementing water management plans for other catchments.

#### 2005 National Competition Policy Assessment

##### *Mersey River*

The Mersey Water Management Plan was adopted on 31 August 2005 (DPIWE, 2005b). Tasmania states that monitoring of environmental water releases from Parangana Dam have shown significant environmental benefits including a doubling of macroinvertebrate density, a five-fold increase in macroinvertebrate abundance, and an overall increase in macro-invertebrate diversity.

Following a review of the planning process on completion of the Great Forester Water Management Plan, the objectives in the Mersey Water Management Plan and the methods for achieving the objectives were clearly stated. Nine objectives are identified in the Mersey Water Management Plan relating to the environment, water usage and development, and compliance and monitoring.

The low flow objectives in the Mersey plan were based on studies conducted below Parangana dam in the mid-1990s and at Lovetts Flat, upstream of the estuary, in 2004. The plan states that the low-risk flow requirements for a suite of aquatic fauna (primarily macro-invertebrate assemblages, native fish and trout) will be met during dry and average years for all months.

It is not clearly shown if all important ecological processes, for both in-stream and over-bank flows, will be protected under the plan's water regime. Even so, under a regulated scenario there is still adequate water to provide a range of low, medium and high floods and freshes to protect a range of instream biological, geomorphic and estuarine processes. Only a small change is detected in summer flows during dry years. Also, it appears that, unlike flood events modelled for natural conditions, the within-year flows have been modelled as regulated flows after the dam was constructed. It should be noted that these are only hydrological comparisons and, unlike the low flow assessments above, did not seem to involve any ecological studies, such as required frequency of watering floodplains for vegetation responses.

The Mersey River estuary is classed as severely degraded (from pollution and other causes rather than flow changes) and of low conservation value. Nevertheless, community consultations have resulted in ecological values being identified for the estuary and there is an expectation that these will be retained or improved. Tasmania considers that natural flows have been largely retained low down in the catchment and so flow requirements for estuarine processes have been met. Tasmania notes that there has been a recovery in the flow regime at the estuary.

The preservation of karst system groundwater dependent ecosystems in the Mole Creek area is an objective of the plan. There are no studies available that demonstrate the water requirements for these ecosystems. As such, the plan relies on the absence of any detected detrimental effect from water use to date in the cave systems. Tasmania is of the view that groundwater flows do not, therefore, appear to have been impacted by the surface water regime, because groundwater time constraints in these karstic systems are believed to be of the order of days. This is a little studied scientific area and would benefit from some research support. The water management plan also states that any further development of the water resources within the defined Mole Creek karst area may be required to consider impacts on groundwater dependent ecosystems. In the plan, the triggers for invoking an assessment of development impacts on groundwater dependent ecosystems are not defined and the subject is left open to discretion.

#### *Lakes Crescent and Sorell<sup>2</sup> and Clyde River*

The Clyde River drains Lake Sorrell and Lake Crescent. The separate water management plans for these areas have been prepared in conjunction, and the two documents need to be treated together for many issues. The Lakes Crescent and Sorell Water Management Plan (DPIWE, 2005c) and the River Clyde Water Management Plan (DPIWE, 2005d) both formally took effect on 30 November 2005.

Tasmania states that the River Clyde has been operated as little more than an irrigation channel during the irrigation season since the two lakes were dammed in the 1830s. Floodplains have been developed as irrigation property and there are no wetlands or other environmental assets other than a highly modified system in the main river channel.

<sup>2</sup> Lakes Crescent and Sorell were identified as a priority area after the development of Tasmania's 1999 implementation programme.

Prior to the *Water Management Act 1999*, extractions from the River Clyde and Lakes Sorell and Crescent were locally managed under a separate unique piece of legislation. Licences were not required, water access was traditionally unlimited and there was little or no involvement in water management affairs by the state government. The Act and the water management plan are now formalising water access and providing water for environmental needs. Available water in the lakes and river is fully allocated to the irrigators to reflect these historical arrangements.

The two lakes have very high environmental values, established through public consultation as part of the statewide protected environmental values work, and one is a Ramsar wetland. In contrast to this, the River Clyde has been heavily used for 150 years and is now highly modified. Consequently, the environmental values of the lakes has been given precedence over those of the river. In particular, water will not be released from Lake Crescent for environmental flows in the Clyde River unless there is a net environmental gain for the combined system (and other water users are not disadvantaged). The environmental flows for the river, with the unusual exception of the lake releases outlined above, have to come from rainfall in the catchment of the river itself (DPIWE, 2000).

On the other hand, there will be releases from the lakes for downstream irrigation, town supply, stock and domestic and firefighting uses. In fact, irrigation supply is nearly assured, on the basis of the hydrological modelling using the last 30 years of streamflow.

The operating rules for the lakes water management plan are aimed at maintaining the lake levels above a critical minimum, to prevent turbidity in Lake Sorell and for habitat for endangered galaxiid fish in Lake Crescent and to ensure that fringing wetlands are flooded often enough and for adequate periods. These rules are well founded in hydrological analyses that show that these environmental objectives will be met with high security, based on historical rainfall patterns. There is a better than 95 per cent probability that these levels will not be breached in the long term under the operating rules. In addition, there will also be sufficient water available from Lake Crescent to provide water for irrigation in the Clyde River with good levels of confidence.

Supporting technical studies are referred to but do not appear to be easily available. There appears to be a technical report on the lake turbidity (a major issue in Lake Sorell) and there are references to scientific studies that have been carried out in the lakes to establish the minimum critical levels for fish breeding. The Commission considers that such reports should be available for public scrutiny and confidence building.

The lake waters are regarded as fully allocated when downstream irrigation entitlements are taken up and the lake levels are maintained. There have been instances of significant over-extraction in the past. The plan envisages that temporary licences will be issued but only up to 2000 megalitres and for no more than three consecutive years, when sufficient water is available.

The River Clyde Water Management Plan retains the special consideration given to maintaining low flows. Maintenance of in-channel low flows is the second objective of the plan, followed by preservation of a range of flood flows for various well-defined purposes. There is no reference to maintaining a complete water regime, contrary to current scientific thinking. This may be less relevant to such a heavily modified river. Overbank flows for wetlands, lagoons, and so on are not addressed in the water management plan.

The plan is somewhat unusual in the priority given to the use of the river for irrigation and other consumptive uses. All available water in the river is assigned to the River Clyde Irrigation District, which is responsible for ensuring that extractions are in accordance with the water management plan; this includes responsibility for environmental flows.

The plan clearly recognises this possible conflict of interest and so states that it incorporates some safeguard rules for the environment. There are cease-to-take rules, differentiated by month, to ensure minimum flows when the lakes are not supplying water. The plan says that these rules must be applied adaptively, and the manager will be required to learn as the process evolves.

The flows at which these rules apply are stated as having been determined by an independent expert, showing that there has been some level of analysis of ecosystem water needs. Similarly, there are triggers and rules for five types of flood flows, and these have also been established by expert assessment.

Tasmania states the environmental flow provisions for the River Clyde have been negotiated by the community during the planning process. Flows representing a moderate level of risk to the environment have been accepted by the state government as appropriate in this catchment because the system is highly modified, and because of the historical access arrangements and the need to balance the dependence of the local economy on irrigation with protecting the few remaining environmental values.

#### 1999 Implementation Programme Priority

##### *Ringarooma River including the Ledgerwood River<sup>3</sup>*

To date, an environmental flows study has been completed for the Ringarooma River catchment. Hydrological modelling is progressing and a Water Use Sustainability Project is nearing completion. A water management plan is expected to be finalised in this catchment at the end of 2006.

##### *South Esk River*

While this catchment does not have a water management plan, a South Esk – Great Lake Water Management Review has been undertaken by Hydro Tasmania, which covers some main elements of water management planning. These elements include identification of environmental values and implementing a management system to protect them, as well as stakeholder consultation.

To date, an environmental flows study has also been completed for this catchment. The process for the Water Use Sustainability Project in this catchment is nearing completion. The water management plan is expected to be completed by the end of 2006.

##### *Elizabeth River, Lake River and Macquarie River below Lake River, Macquarie River Downstream of Ross and Tooms River*

In developing a water management plan for these areas, the rivers in the Macquarie Basin will be considered in conjunction with each other. Tasmania has stated that environmental flows studies have been completed for these four areas and Water Use Sustainability Projects are nearing completion. The water management plan covering these areas is not planned to be finalised until mid- to late-2007.

<sup>3</sup> The Ledgerwood River was identified as a priority area after the development of Tasmania's 1999 implementation programme.

*Coal River*

A holistic environmental flows study has been completed for the Coal River. A water management plan is expected to be completed by the end of 2008.

*Liffey River and Meander River*

An environmental flows study has been completed for the Liffey River. A management plan for this catchment is expected to be completed as part of the Meander River catchment.

In the Meander River catchment, processes for water management planning have stalled as a result of the proposed construction of Meander Dam. Once these issues have been resolved, Tasmania plans to recommence planning activities in the catchment. A water management plan is expected to be completed by the end of 2007.

The issues surrounding the construction of Meander Dam are discussed in Section 7.4.3 on Investment in New or Refurbished Infrastructure.

*North Esk River and St Patricks River*

The North Esk River and its tributaries, including St Patricks River, are no longer priorities for the Tasmanian Government. Tasmania considers that earlier water allocation issues have been resolved by issuing water licences for Launceston's urban water supply with passing flow conditions.

Environmental flows studies have been completed for both the North Esk River and the St Patricks River; however, there are no plans to develop a water management plan for either system.

## Post 1999 Implementation Programme Priority

*Little Swanport River*

The Little Swanport River was not included in the 1999 list of priority systems. Nevertheless, a water management plan is being developed as a response to a significant increase in applications for water allocations and the recognition of the potential for impact of the proposed allocations on the estuarine aquaculture industry.

The water management plan is currently being reviewed by the Resource, Planning and Development Commission. It is expected to be finalised in late 2005.

*Derwent River*

Hydro Tasmania has commenced a Derwent River Water Management Review that is similar to the review in the South Esk River. The Derwent River was not included in the 1999 list of priority plans and Tasmania does not propose to develop a water management plan for this system before 2007. A holistic environmental flows study has been completed for the Derwent River.

*North West Bay River*

Although the North West Bay River was not included in the 1999 list of priority rivers, the catchment has been prioritised as a response to increasing water demand issues for the Hobart urban area. This has required allocation issues to be resolved.

To date, an environmental flows study has been completed for this catchment. A water management plan is planned to be finalised by the end of 2006.

## General

Completed water management plans contain provisions for monitoring activities to support the plan objectives. These include monitoring provisions for surface water use such as allocations, streamflows, the installation of meters and licensed water use, as well as monitoring provisions for environmental condition such as macro-invertebrates, fish and water quality parameters at prescribed sites.

Monitoring in other catchments is carried out under other strategies such as the waterways monitoring reports process that provides annual reporting on information gathered by the three natural resource management regions as part of the baseline monitoring network. This information is used for decisions on water management in catchments across Tasmania. This information builds on that of several monitoring programs that ran from 1993 to 2000, carried out under the National River Health Program.

## Public Consultation and Education

A range of mechanisms are used in Tasmania for public education and consultation on a variety of water related issues. In relation to public consultation and education processes for water management planning, the following approaches have been used:

- public consultation was undertaken in relation to proposed legislative amendments to the water management planning process in 2004, resulting in the *Water Legislation Amendment Act 2004*
- a discussion paper was released for comment in relation to generic principles for water management planning; comments received were incorporated prior to the finalisation of the Generic Principles for Water Management Planning
- public consultation and stakeholder meetings were undertaken as part of the development of water management plans; they included statutory public comment periods on four draft water management plans (for the Little Swanport, Mersey, Lakes Sorell and Crescent and River Clyde Water Management Plans). Since March 2004, an estimated further 20 public and stakeholder meetings have been held as part of the water management planning work undertaken by the Department of Primary Industries, Water and Environment
- public consultation and stakeholder meetings were held as part of the Water Use Sustainability Project in 12 catchments. To date, 20 public meetings have been held with irrigators since the commencement of the project in September 2003, and
- public consultation is being carried out for the 2005 review of the *Water Management Act 1999* and water related legislation. This review currently is underway and provides key stakeholders and the broader community with an opportunity to comment on measures to improve the operation of the Act and mechanisms for ensuring the objectives of the Act continue to be met.

## Submissions

The Tasmanian Conservation Trust has raised concern about the lack of progress in implementing water management plans for the 16 priority catchments within Tasmania. The Trust highlights the commitment of the Tasmanian Government to complete the 16 plans by the end of 2005. The Trust is not pleased with the Tasmanian Government's non-compliance with this agreed timeframe and indicates its frustration over the possibility that only four plans will be finalised in the agreed timeframe.

## Discussion and Assessment

Tasmania states that the policies for providing water for ecosystems within its water resource systems are based on the ARMCANZ/ANZECC National Principles for the Provision of Water for Ecosystems.

The *Water Management Act 1999* provides for the recognition of river regulation and consumptive use as potentially impacting on ecological values. Tasmania's licensing approval guidelines and water management plans include provisions for meeting the water regime necessary to sustain ecological values of aquatic ecosystems whilst recognising the existing rights of other water users, and further allocation of water for any use on the basis that ecological processes and values are sustained.

Accountabilities in all aspects of management of environmental water are transparent and clearly defined. The Department of Primary Industries, Water and Environment is responsible for the day-to-day management of environmental water provisions, as well as the licensing arrangements for consumptive users.

Monitoring regimes under the Tasmanian planning process inform the adequacy of environmental water and, along with various research projects, provide for an adaptive management framework.

### Water Planning

Overall, the Commission is satisfied that the arrangements for water planning in Tasmania are appropriate and have legislative backing.

Tasmania has not complied with the timeframes agreed to for completing water management plans for the 16 identified priority catchments by the end of 2005. It has also taken considerable time to complete the three plans that have been implemented.

Tasmania has demonstrated an adaptive approach to water planning in that it has implemented a range of management strategies and modified the plan development processes to incorporate the lessons learned during development of the Great Forester Water Management Plan.

The Commission notes the additional work undertaken through the environmental flows studies that have been completed for the remaining priority catchments. It is

understood that these will contribute to water management plans in those systems.

Tasmania has demonstrated the integration of water management with other resource management processes through both the Resource Management and Planning System and the Natural Resource Management Framework. Both of these strategies build on existing activities and legislation.

The Commission is satisfied that Tasmania has demonstrated an integrated catchment management approach to water management and planning processes. The administrative arrangements Tasmania has in place demonstrate an integrated approach to natural resource management.

#### Provisions for the Environment

The Commission notes that Tasmania has used the In-Stream Flow Incremental Methodology to establish environmental water provisions. While widely adopted overseas, this approach is now regarded as simplistic in Australia, where highly variable flows are regarded as natural. Consequently, the whole flow regime of a catchment needs to be considered. There are naturally occurring dry periods in many rivers. Ecosystems have adapted to these regimes, and ensuring minimum flows in these rivers could be destructive of the aquatic ecosystems. Additionally, out-of-channel flows need to be considered to maintain the health of wetlands, billabongs and floodplains.

For the 2004 National Competition Policy assessment, Tasmania's new holistic method of providing for the environment was accepted as a proposal, although it is not clear whether the National Competition Council assessed the methodology in detail.

For this 2005 National Competition Policy assessment it is still not clear that Tasmania's new method would meet the requirements of a holistic method, as outlined in Appendix B of the 2004 National Competition Policy assessment in relation to the ARMCANZ/ANZECC National Principles for the Provision of Water for Ecosystems.

The Commission considers that Tasmania has not sufficiently demonstrated that its new holistic approach establishes adequate rules for environmental water needs. Tasmania has noted some elements of the holistic approach,

such as recognising the importance of providing adequate freshwater flows into estuaries, and supporting research into establishing these flows in the same catchment.

Tasmania's process for estimating environmental flow volumes indicates that non-environmental considerations appear to be still built into the environmental flow requirements—at least for within-year flows. This is a concern for the Commission.

The Commission notes however, that since the implementation of the first water management plan, Tasmania has demonstrated improved transparency and community consultation in determining how non-environmental trade-offs are incorporated into the provisions for the environment.

#### Water Entitlements

The Water Use Sustainability Project legitimises excessive water extractions in excess of what is allocated for consumptive use. The project seeks to stabilise extractions by participating users (irrigators), providing some (low priority) security in return. It also introduces metering and a database for better management in the future.

The Commission considers that Tasmania has improved the transparency of trade-offs between environmental and non-environmental water requirements. It has achieved this through improvements to its community and stakeholder consultation processes for determining allocations for the environment in developing water management plans. Tasmania provides reduced allocations to the environment as a result of socio-economic considerations that are factored in after an open and transparent community consultation process.

#### *Review of Example Water Management Plans*

As noted above, Tasmania has completed water management plans for three of the 16 priority catchments identified in its 1999 implementation programme. In viewing Tasmania's approach to water management and determination of environmental flow arrangements, the Mersey River and the Lakes Crescent and Sorell and the Clyde River systems were reviewed as examples of planning activity across the state.



Notwithstanding changing priorities and the implementation of the Water Use Sustainability Project, it is clear that progress on developing water management plans has been considerably slower than anticipated in 1999.

In addition, the time taken to progress the three finalised water management plans has been far longer than anticipated and has delayed commencement of other plans. Tasmania considers the primary factor for the delay in the completion of plans is the period required to educate catchment communities and then negotiate mutually acceptable solutions with all stakeholders.

Both the modelling of flows within catchments and the estimation of ecosystem requirements have been improved in recent years. While flow modelling is well advanced, the accuracy of the flow models is not clear. This can affect the accuracy of predicted ecosystem effects. The new holistic method of assessing ecosystem water needs is being trialled but it appears that it is a modified version of the In-Stream Flow Incremental Methodology procedure. While some questions remain about the adequacy of the In-Stream Flow Incremental Methodology, it is difficult to judge whether this improved method will prove to be adequate.

There seems to be a remaining emphasis on low flow, rather than whole-ecosystem, requirements in the Mersey River catchment. While this may be a legacy from earlier approaches, without sound justification it would not constitute a 'best available science' approach if it persisted in other catchments.

Flow effects are primarily determined through comparisons between baseline hydrographs and hydrographs after development, with direct ecological studies having been carried out only for unspecified fauna under low flow conditions. Best practice would require that ecological studies be conducted for a range of organisms under a range of flow conditions.

Apart from the plan itself, there is no other information to demonstrate the assertions in the Mersey River Water Management Plan. The consideration of freshwater flows into the estuary is commendable, given that the estuarine requirements for flows are often neglected. It is also essential given Tasmania's considerable aquaculture and fishing industry.

Even so, the shortage of reliable information on flow needs of estuaries and the water needs of karst systems (and possibly other groundwater dependent ecosystems) for the Mersey River implies that water management plans should provide for improved research into these issues so that plans can be improved by including new, reliable information.

The Lakes Crescent and Sorell and the Clyde River Water Management Plans appear to consistently provide high priority to preserving environmental values in the lakes and high priority for consumptive uses in the river. The concern is that the technical studies used to establish the particular rules are not referenced, nor is there a method for accessing them. This means that it is not possible to assess the quality of the underpinning science. The trade-offs between environmental water use and consumptive use have been built into the establishment of the environmental values—most notably in the case of the Clyde River where there was a decision to give preference to consumptive uses, even though environmental water retained Surety 2.

While not disputing the decision to accord low priority to environmental water in the Clyde River, there seems to be a mismatch between the surety level for this water and the priority given to irrigation water uses. The Commission does recognise, however, that the catchment is very unusual in that the irrigators have traditionally accessed and managed all the water under their own piece of legislation for over 150 years. The plans recognise these historical unfettered arrangements but seek to formalise access and water management arrangements under current legislation.

The objectives of water management plans make it clear that there is still an emphasis on a minimum flow approach, instead of treating minimum flows as one component of a holistic water regime. The description of environmental water releases from storage dams is also couched in terms of daily minimum flows, rather than a more sophisticated recognition of the variable downstream environmental needs. This may be an artefact of the time when this water management plan commenced, rather than being an ongoing feature of water management plans. The 'cease to take' provisions are more sophisticated in that they recognise the changing monthly requirements but are still constant across years. That is, there is no recognition of a need for inter-

annual variability. It is possible that this variability is less pronounced in Tasmania than in mainland Australia, but this is difficult to determine without access to technical studies.

Overall, the Commission is concerned that while Tasmania's method for assessing environmental flow needs has improved in recent years, Tasmania has not fully demonstrated that the revised method meets the requirements of best available science. The Commission notes that future water management plans would be expected to demonstrate the merits of the revised method.

#### Public Consultation and Education

Through its current water planning regime, Tasmania has consulted on a variety of different water management issues such as amendments of legislation, development of water management planning policy, the roll-out of water management plans, and the Water Use Sustainability Project.

The poor reception of the first water management plan has caused Tasmania to modify the way stakeholders and the community are educated and involved in the water management planning process.

The Great Forester plan did not include a rigorous and transparent assessment of the trade-offs between environmental and human uses, which in turn reduced the effectiveness of consultation and affected the confidence of some stakeholders. For the following water management plans, the consultative processes have been improved.

The Commission is satisfied that Tasmania's consultative processes are adequate.

#### Summary

In light of Tasmania not meeting the original 1999 implementation programme timeline for substantial completion of water management plans for all 1999 identified systems by the end of 2005 (which was reiterated in the 2004 National Competition Policy assessment) and not demonstrating that the current holistic method incorporates the best available science, the Commission has concerns about the progress of water reform against this assessment item.

At the same time the Commission notes that:

- water systems in Tasmania generally do not face the

same pressures in terms of water extraction as some of the mainland Australian jurisdictions

- the Tasmanian Government has taken steps to better understand the environmental needs in systems where plans are yet to be developed through the environmental flows studies, and
- the holistic method will continue to be proved up in practice through the current trial in the Little Swanport Catchment, and its application in wider water system planning.

As such, the Commission considers overall that Tasmania has made some progress towards meeting its COAG commitment for water planning and addressing overallocated systems.

### 7.2.4 Assigning Risks for Changes in Allocation

#### Assessment Issues

The Commission expects Tasmania to demonstrate that it has a process and timetable in place to integrate the risk assignment framework into its legislative and administrative water entitlement and planning regimes, and have applied the framework for any changes in allocations that have not been provided for in its current water plan overallocation pathways.

Under Tasmania's *Water Management Act 1999* (and where required to give effect to a water management plan) a water licence holder is entitled to compensation when it is necessary to reduce the water allocation because the total allocations exceed the quantity of water available or because they are inconsistent with the objectives of the Act.

No compensation is payable, however, if the reduction in allocation is required to achieve the water regime that best gives effect to the environmental objectives of an approved water management plan.

Tasmania expects to establish a process to determine the requirements to integrate a risk assignment framework into the state's legislative and administrative water entitlement and planning regimes, where appropriate. Tasmania's National Water Initiative implementation plan will detail this process.

## Discussion and Assessment

Tasmania currently has a basic framework for managing reductions in allocations. The current framework was developed prior to Tasmania's signature of the National Water Initiative and applies only in water management plan areas.

Although Tasmania states that it intends to establish a process for integrating a risk assignment framework into its water entitlement and planning regimes, there is no demonstration yet of the timeframes within which this may be carried out or whether the framework is to be in line with the National Water Initiative.

The Commission considers that considerable uncertainty surrounds the assignment of risk to changes in allocations in areas that are not covered by a current water management plan. While the Commission notes that this is a function of the roll-out of water management plans in Tasmania, it is a contributing factor to why any further slippage in the timetable for planning could undermine the key goals of water reform.

### 7.2.5 Indigenous Access

#### Assessment Issues

The Commission is looking for Tasmania to show that it has in place arrangements for the incorporation of Indigenous water issues into water planning processes, including the recognition of the possible existence of native title rights to water.

Currently the *Water Management Act 1999* does not include any direct references to Indigenous rights.

Tasmania has indicated that this is due to the fact that this issue was not raised during the consultation phase prior to the proclamation of the *Water Management Act 1999*.

The Tasmanian Government considers that Indigenous access may be largely covered through other management mechanisms.

In Part 5 of the *Water Management Act 1999*, Section 48(1) defines 'casual use of land' as lawful use of water by persons not normally resident on riparian land, for activities such as camping, recreational use or travelling livestock, and defines 'specified purpose' as either domestic use,

irrigation of a household garden, stock watering, fire fighting or drilling. Following on from this, Section 48(2)(b) allows water to be taken by persons in their 'casual use of land' for a 'specified purpose'.

A water management plan may identify Indigenous water access rights as an issue to be addressed within the objectives of a plan. No Indigenous issues have yet been addressed or considered in any finalised water management plans.

Tasmania expects to review the current arrangements for the incorporation of Indigenous water access issues into its planning processes some time in the future.

## Discussion and Assessment

Under Tasmania's current arrangements, there are no specific legislative provisions that require Indigenous water access issues to be dealt with in its water planning processes, nor are there any provisions for the recognition of the possible existence of native title rights to water.

There is scope to include indigenous water access issues within the objectives of a Water Management Plan.

Indigenous water access rights could be identified as an issue to be addressed by a Plan. The Commission notes however, that of the four systems covered by effective Water Management Plans none makes any provision for Indigenous access to water, nor demonstrates that Indigenous access was considered.

The Commission considers that Tasmania has not demonstrated that the current arrangements within legislative and administrative regimes for water management in Tasmania are adequately addressing Indigenous water issues within the state.

### 7.2.6 Interception

#### Assessment Issues

The Commission will look for Tasmania to provide information on the steps being taken to implement water interception measures detailed in the National Water Initiative, including any application of the National Water Initiative provisions to recent activities.

Tasmania considers its current and proposed future approach in relation to interception to be consistent with the National Water Initiative.

Currently under the *Water Management Act 1999*, a licence is required to store and use water in all dams within Tasmania; this is in addition to a dam permit for construction. The only exception to this licence requirement is an off-stream storage that has less than one megalitre capacity.

Furthermore, the *Guidelines to Assess Applications for New Water Allocations from Watercourses During Winter* provide a management approach for the granting of any new winter water allocations for overland flow interception.

In the *Report on the Operation of the Water Management Act 1999* (DPIWE, 2005e), one of the key issues identified as needing to be addressed in the short to medium term was the need for greater management of the impacts of water interception activities, such as the conversion of farming land to plantation forestry, and other changes in landuse.

Public submissions in relation to interception have been received as part of the public review of the *Water Management Act 1999*. Tasmania states that the majority of public submissions in relation to interception relate to the impact of forestry plantations. Over the coming months, the Department of Primary Industries, Water and Environment expects to review these submissions and make recommendations as necessary for legislative and procedural changes. Tasmania's implementation plan will set out the approach for dealing with interception in accordance with the requirements of the National Water Initiative.

Tasmania considers that it would pre-emptive at this stage to detail any actions that Tasmania is considering until the implementation plan is further developed. Previously, Tasmania has suggested that the key points on interception to be included in its implementation plan relate to:

- community consultation through regional natural resource management strategies
- seeking funding through investment proposals associated with the strategies for prioritising catchments and undertaking risk analyses of these areas, and
- developing a risk management strategy that takes into account both environmental and socio-economic issues, which may include dealing with allocations for large scale plantations in fully allocated catchments.

## Submissions

The Tasmanian Conservation Trust has raised concerns about the management arrangements for interception from plantation forestry. The Trust is of the view that the work currently being undertaken to assess the impacts of the widespread expansion of plantations in Tasmania is inadequate. Particular concern was raised over the assessment process, which the Trust says includes selective application of different spatial and temporal scales that will affect the results.

## Discussion and Assessment

There is currently no clarity about timeframes within which Tasmania intends to carry out any legislative and administrative changes relating to interception.

Tasmania is taking some steps to address interception activities, as detailed in the National Water Initiative. These are: through the licensing conditions stipulated in the *Water Management Act 1999*, the allocation arrangements for approving new developments, and the consideration of existing dams and bores in the development of water management plans.

The Commission notes Tasmania's plans to address interception resulting from landuse change in the near future. The Commission further notes the concerns raised by the Tasmanian Conservation Trust in relation to the development of these management arrangements, with particular regard to plantation forestry.

As required for this assessment, Tasmania has reported on its activities to address implementation of water interception measures detailed in the National Water Initiative, and consequently met its COAG commitments in this area. The Commission will continue to track Tasmania's progress in addressing interception in accordance with the timeframes set out in the National Water Initiative.

### 7.3 Water Markets and Trading

#### Assessment Issues

Trading arrangements in water entitlements are to be instituted to maximise water's contribution to national income and welfare, where systems are physically connected or hydrologic connection and water supply considerations permit trading. Under the 1994 Water Reform Framework, trading arrangements were to be finalised by 2005. The National Water Initiative expands and re-defines the 1994 water reform commitments.

Consistent with its National Water Initiative commitments, the Commission expects Tasmania to:

- have removed remaining institutional barriers to temporary trade
- be well advanced in the removal of any existing institutional barriers to permanent water trade out of irrigation areas, up to an annual threshold limit of five per cent of the area's total water entitlement
- demonstrate trading rules in existing water management plans facilitate trading consistent with the actions and outcomes of the National Water Initiative, or, if inconsistent, a process for review is in place
- demonstrate a process is in place to incorporate trading rules consistent with the National Water Initiative into new water plans, and
- have pathways in place by the end of 2004, leading to the full implementation by the end of 2006, of compatible, publicly-accessible and reliable water registers of all water access entitlements and trades.

**Tasmania has established arrangements for the permanent and temporary trade of unregulated system licences and allocations and irrigation scheme rights.**

#### Unregulated Systems

**Under the *Water Management Act 1999*, water licences are separated from land title. A licence entitles the holder to take water out of a water resource under the terms of the licence. A water allocation (or allocations) is attached to the licence and specifies the amount of water that can be taken under the licence and the purpose for which the water is taken.**

**Water licences and allocations can be transferred either permanently or temporarily. Licences can be permanently transferred or temporarily leased with or without an allocation. A temporary or permanent transfer of a water allocation can occur only if the recipient holds a water licence.**

**The *Guiding Principles for Water Trading in Tasmania* (DPIWE, 2004) provides the basis for the assessment of all applications for the transfer of water licences and allocations under the *Water Management Act 1999*. Under the principles, a transfer can be approved only:**

- if the transfer would not have a significant impact on other water users or the environment, and
- with the consent of any person noted on the register of water licences as having an interest in the licence.

**Further, under the principles, conditions imposed on extraction, diversion and use of the transferred water should be used to manage:**

- environmental impacts
- hydrological, water quality, hydrogeological and geomorphological impacts
- delivery constraints, or
- impacts on other water users.

**Trading zones and exchange rates for trade within and between the zones are also addressed in the principles.**

**Trades within a trading zone (the section of a single water resource between major tributaries) can occur freely without the need for in-depth site impact assessment. Trades between trading zones are subject to greater scrutiny of the potential environmental and third-party impacts on a case-by-case basis. To help better facilitate trade between zones, Tasmania will develop exchange rates to address transmission losses and reductions in reliability in key areas of the state.**

**Further system-specific trading rules can be established through water management plans. No system specific rules (other than those prescribed in the guiding principles) have yet been applied in the finalised or draft water management plans.**

The publicly-available Water Information Management System (WIMS) registers all water licences and allocations, and any third-party interests. The register also records permanent and temporary transfers of water licences and allocations. Tasmania is also working with other jurisdictions to ensure an adequate level of compatibility between their respective entitlement registers. Compatible entitlement registers will help minimise transaction costs and improve market information to support the expansion of a national water investment market.

#### Irrigation Schemes

Four irrigation schemes operate in Tasmania. Each scheme holds a bulk water licence under the *Water Management Act 1999*, but users within the scheme are subject to the provisions of the *Irrigation Clauses Act 1973*. Each user is provided with an irrigation right (the entitlement to take water from the irrigation scheme) that is separated from land title and transferable within the irrigation district, subject to conditions imposed by the managing authority under its transfer rules. Rights can be temporarily leased or permanently transferred. Annual allocations under the rights can also be transferred within the district.

The current transfer rules cover the physical constraints of the scheme infrastructure and the protection of third parties and the environment (including water quality). Recent changes to transfer rules also allow non-landholders or occupiers to hold irrigation rights.

Tasmania advises that there are no institutional barriers to transferring water outside of an irrigation district. Although an irrigation right cannot be transferred outside of a district, a variation to the scheme's bulk water licence allows a transfer of a water entitlement to occur to another licence outside the scheme (subject to the aforementioned approval procedure and trading rules for unregulated systems).

#### Submissions

In its 2005 submission, the World Wildlife Fund Australia comments that the environmental impacts of transferring water need to be fully understood prior to allowing water to be traded. Water trading resulting in a negative impact on the environment either through in-stream impacts or on-ground use should not be allowed. Where these impacts are not fully understood, a precautionary approach must be applied.

## Discussion and Assessment

Tasmania has established effective legislative and administrative arrangements for water trading, commensurate with the relatively small water market and limited physical water market opportunities in the state.

The separation of water licences from land title both within and outside irrigation districts provides the basis for trade in water licences.

Trading rules for unregulated systems are generally applied to manage only potential environmental impacts and the physical constraints of the system. The *Guiding Principles for Water Trading in Tasmania* addresses the environmental protection objectives of the *Water Management Act 1999*. Trading rules in the finalised and draft water management plans reflect the principles in that document. The use of trading zones in Tasmania further aids the practical management of trading, including managing environmental or third-party impacts.

Tasmania has a public entitlement register that defines entitlements and registers third-party interests. The approval of registered third parties is required before a trade may proceed.

The Commission considers that Tasmania has made significant progress in meeting its COAG commitments towards water trading. The Commission encourages Tasmania to continue its work to develop further administrative arrangements to facilitate the broadening and deepening of the water market in Tasmania.

## 7.4 Best Practice Water Pricing and Institutional Arrangement

### 7.4.1 Water Storage and Delivery Pricing

#### 7.4.1a Metropolitan

##### Assessment Issues

##### *Full cost recovery and consumption based pricing*

Tasmania is required to demonstrate that there has been substantial movement towards upper bound pricing for all metropolitan water and wastewater businesses. For those businesses that are not pricing close to the upper bound of cost recovery, Tasmania should demonstrate price paths are in place that will move them towards the upper bound of cost recovery.

Tasmania is also required to show that its metropolitan bulk and retail water services have implemented the Government Prices Oversight Commission's recommendations on best practice pricing and:

- have reviewed volumetric charges
- have identified and made transparent volumetric cost components
- have removed 'free water allowances' or, if deemed necessary, ensured these are within the range identified by the urban water pricing guidelines
- where two-part tariffs are not employed, a robust examination has demonstrated that two-part tariff pricing is not cost-effective, and
- are achieving at least the lower bound of cost recovery and are moving towards the upper bound of cost recovery.

##### *Dividends*

Tasmania is required to demonstrate that dividend policies for metropolitan water and wastewater businesses comply with COAG obligations.

##### *Cross-subsidies and Community Service Obligations*

Tasmania is required to demonstrate that:

- remaining cross-subsidies and all Community Service Obligations are identified, and transparently reported consistent with COAG obligations, and

- own use water is being identified and separately funded so that water users are not cross-subsidising council water use.

The Commission will also consider the extent of remaining 'free water allowances', which can have the effect of introducing cross-subsidies.

**In Tasmania, all urban retail water and wastewater services are provided by local government. The Commission notes that some of the questions raised above relate to these regional water providers. As such, they will be addressed in the next section of the assessment where the compliance of regional water authorities with COAG water pricing reforms is addressed. In this section, the compliance of bulk water authorities with COAG water pricing reforms is addressed.**

##### Cost Recovery

**Under the *Government Prices Oversight Act 1995*, the Government Prices Oversight Commission is required to investigate the bulk water authorities every three years. The Government Prices Oversight Commission recommends maximum prices (which can include maximum revenues) and the Minister Assisting the Premier on Local Government subsequently issues a determination for each bulk water authority setting out maximum volumetric prices and maximum allowable revenues for the next three years.**

**In April 2004, the Government Prices Oversight Commission conducted the second investigation into the pricing policies of three bulk water supply authorities—Hobart Water, Esk Water and Cradle Coast Water (GPOC, 2004a). This investigation illustrated that bulk water authorities are fully recovering costs and earning a positive rate of return on their assets without incurring monopoly rents.**

**The three bulk water authorities are joint local government authorities—owned by councils that are also their customers. The Tasmanian Government has indicated that this structure provides a natural restraint on any behaviour that may lead to the authorities charging monopoly rents. As owners, the councils focus on seeking commercial returns on their funds invested in the business. As customers, there is a natural preference for lower prices for water consumers. Given this, any increase in total revenues, above those required to cover increased costs of operation of the authorities, would be entirely due to the desire of the**

owner councils to obtain higher returns from their water businesses. Local councils are able to control, within broad parameters, the pricing for water from the water storages through to homes and businesses in their municipalities.

#### Consumption Based Pricing

In their investigation into bulk water pricing policies, the Government Prices Oversight Commission notes that, although the pricing policies of the bulk water authorities do not have a direct impact on consumers, it is important that prices send an appropriate signal to influence consumption at each link of the supply chain.

The three bulk water supply authorities—Hobart Water, Esk Water and Cradle Coast Water—all adopt two-part tariffs in their pricing structure. In the 2004 investigation into bulk water pricing policies, both Esk Water and Cradle Coast Water were found to satisfy National Competition Policy requirements for consumption based pricing. In the case of Hobart Water, the Government Prices Oversight Commission expressed serious concerns about the implementation of two-part pricing principles, and found that Hobart Water did not meet National Competition Policy requirements for consumption based pricing.

While preferring nodal pricing—different prices at each supply point—as the mechanism to determine the variable component of the two-part tariff, the Government Prices Oversight Commission accepted the use of regional averaging. Regional averaging is considered acceptable where regional differences in variable costs are not great. Where variable cost differs by supply point, nodal pricing should be used as a means of determining both fixed and volumetric charges.

The Government Prices Oversight Commission noted that both Esk Water and Cradle Coast Water set their volumetric rate to be equal to long run marginal costs, while Hobart Water did not. Further, the method used by Hobart Water to calculate volumetric charges results in customers subsidising the councils that require augmentation works. The Government Prices Oversight Commission recommended that Hobart Water be required to review its application of volumetric charges to ensure that councils who forecast growth and need augmentation pay consistent, equitable and efficient prices.

In their investigation into bulk water pricing policies, the Government Prices Oversight Commission recommended maximum prices and policy principles for the volumetric component of the two-part tariff.

There is currently no common approach to setting fixed charges across authorities. The Government Prices Oversight Commission has accepted the current methods for setting fixed charges by Hobart Water, Esk Water and Cradle Coast Water, noting that these methods will need to be phased out in preference for nodal pricing based on the usage of the network at times of peak flow. Where nodal pricing is impractical, using the weighted number of connections of customers to allocate the fixed charge should be considered.

#### Dividends

In their investigation into bulk water pricing policies, the Government Prices Oversight Commission notes that councils receive financial benefits from their ownership of the bulk water schemes in the form of tax equivalents and dividends paid by the bulk water authorities.

#### Cross-subsidies

It is the view of the Government Prices Oversight Commission that the use of regional averaging to determine the volumetric component of the two-part tariff for Cradle Coast Water and Esk Water does not currently imply a significant efficiency loss or cross-subsidy. Even so, the Government Prices Oversight Commission recommends that the cross-subsidies that arise through regional averaging should still be made transparent through financial reports.

The Government Prices Oversight Commission also notes that the acceptability of regional averaging could change if the cost structure of the water authorities changes. For this reason, it is important that authorities monitor the implicit cross-subsidies implied by regional averaging.

Tasmania supports the view of Cradle Coast Water that, given the various pricing structures of the participating councils, providing this information to the consumer with greater transparency unnecessarily complicates the issue.



### Community Service Obligations

In their investigation into bulk water pricing policies, the Government Prices Oversight Commission identified that Hobart Water's provision of recreational facilities is a community service obligation. Hobart Water's *2004–05 Annual Report* reported a total community service obligation cost of \$252 000 in 2003–04 and the same amount in 2004–05.

The community service obligations reported in Hobart Water's annual report refer to the contributions that Hobart Water makes to recreational reserves, such as Tolosa Reservoir, Water Works, and Risdon Brook Dam. Hobart Water has operational dams in the first two recreational areas, which are owned by the Glenorchy Council and Hobart City Council respectively. The Risdon Brook Dam is a water catchment, storage and recreational area owned by Hobart Water.

At this stage, no alternative management arrangements aimed at removing the need for an ongoing community service obligation have been considered for Hobart Water.

The Government Prices Oversight Commission did not identify any community service obligations for Esk Water or Cradle Coast Water.

## Discussion and Assessment

### Cost Recovery

By demonstrating that bulk water authorities are fully recovering costs and earning a positive rate of return on their assets without incurring monopoly rents, the Commission considers that Tasmania has satisfactorily met its COAG commitments for this component of the assessment.

### Consumption Based Pricing

The Commission considers that Tasmania has made significant progress towards meeting its COAG commitment for this component of the assessment. Tasmania has demonstrated that two-part pricing is in place for the three bulk water supply authorities: Hobart Water, Esk Water and Cradle Coast Water. Two of these—Esk Water and Cradle Coast Water—are setting volumetric charges that are consistent with long-run marginal costs. To fully meet its

COAG commitments, Tasmania needs to demonstrate that Hobart Water has reviewed its application of volumetric charges.

The Commission notes that the Government Prices Oversight Commission has recommended nodal pricing as the preferred mechanism to determine both fixed and volumetric charges. The Commission will maintain a watching brief on the progress of Tasmania's water supply authorities towards using nodal pricing. This is of particular relevance to Tasmania's commitments to implement best practice pricing in signing up to the National Water Initiative.

Tasmania has provided information on, and made transparent, volumetric cost components.

### Dividends

The Commission notes that dividends are being paid in Tasmania. However, the Commission remains unclear about whether dividends which are being paid in Tasmania reflect commercial realities and stimulate a competitive market outcome.

### Cross-subsidies

The Commission considers that Tasmania has made some progress towards meeting its COAG commitment in this component of the assessment.

Tasmania considers that the use of regional averaging does not constitute a significant cross-subsidy and that, given the various pricing structures of the different councils, the additional transparency of providing this information to the consumer unnecessarily complicates the issue. However, the Government Prices Oversight Commission has recommended that cross-subsidies that arise through regional averaging should be made transparent through bulk water authority's annual reports. The Commission will maintain a watching brief on Tasmania's progress in implementing the Government Prices Oversight Commission's recommendations.

### Community Service Obligations

The Commission considers that Tasmania has made some progress towards meeting its COAG commitments with regard to community service obligations. The investigation into bulk water pricing policies identified that Hobart Water's provision of recreational facilities is a community service

**obligation. The Commission notes that, at this stage, no alternative management arrangements aimed at removing the need for an ongoing community service obligation have been considered for Hobart Water.**

**Even though the size of current community service obligations is very small, the Commission considers that there would still be benefit in Tasmania exploring alternative management arrangements aimed at removing the need for an ongoing community service obligation.**

### 7.4.1b Rural and Regional

#### Assessment Issues

Tasmania is required to demonstrate for rural and regional systems that:

- they have achieved at least the lower bound of cost recovery and are moving towards the upper bound, or
- they have established a price path to achieve at least the lower bound of cost recovery with transitional Community Service Obligations made transparent, or
- for schemes where the lower bound of cost recovery is unlikely to be achieved in the long term, that they have made the Community Service Obligation required to support the scheme transparent, and
- that they have made cross-subsidies transparent.

#### *Rural systems – Cost recovery*

Tasmania is required to show that the South East Irrigation Scheme has continued to progress towards pricing that achieves the lower bound of cost recovery as soon as possible, consistent with NCP guidelines.

#### *Regional water and wastewater businesses - Cost recovery*

Tasmania is required to show that Launceston has implemented trade waste charging and that all councils:

- have implemented the recommendations of the Government Prices Oversight Commission on best practice pricing
- are achieving at least the lower bound of cost recovery and are not exceeding the upper bound limit
- are identifying and reporting Community Service Obligations, and

- are identifying and separately funding own use of water and wastewater services so that water users are not cross-subsidising council water use.

#### *Regional water and wastewater businesses – Consumption based pricing*

Tasmania is also required to show that:

- councils have reviewed volumetric charges;
- volumetric cost components for local government water businesses have been identified and are transparent
- where two-part tariffs are not employed, a robust examination has demonstrated that two-part tariff pricing is not cost-effective, and
- ‘free water allowances’ have been removed or, if deemed necessary, are within the range identified by the urban water pricing guidelines.

#### *Rural Systems - Cost Recovery*

**Less than ten per cent of irrigation water used in Tasmania is sourced from publicly-owned infrastructure. The vast majority of irrigation water is sourced from unregulated streams or on-farm storages utilising privately funded infrastructure.**

**There are three government-owned irrigation schemes in Tasmania. These are Cressy-Longford Irrigation Scheme, South-East Irrigation Scheme, and Winnaleah Irrigation Scheme, with ownership of all three vested in the Rivers and Water Supply Commission.**

**On 1 April 2002, the management of the Cressy-Longford Irrigation Scheme was devolved from the Rivers and Water Supply Commission to the Cressy-Longford Irrigation Scheme Limited. On 1 December 2003, the Rivers and Water Supply Commission devolved the management of the Winnaleah Irrigation Scheme to the Winnaleah Irrigation Scheme Limited. The Cressy-Longford Irrigation Scheme Limited and Winnaleah Irrigation Scheme Limited are required to operate the schemes on a commercial basis with water prices set to recover at least the lower limit of the COAG pricing benchmark.**

**The South-East Irrigation Scheme is currently managed by the Rivers and Water Supply Commission. As a government business enterprise, the Rivers and Water**

Supply Commission is required to include the payment of tax equivalents and a loan guarantee fee in the determination of its costs for operating its trading enterprise. Water pricing is set through the business plan for the scheme, which forms part of the Rivers and Water Supply Commission's corporate plan.

Water prices cover operational, management, maintenance, finance and asset consumption (as depreciation or renewal annuities) costs. Necessary environmental externalities are incorporated into the fees paid by irrigators including water quality monitoring and resource management costs. All schemes receive an equity injection from the government to cover the costs of repayments and interest on loans that were established to provide the capital funding for construction of the schemes. These government equity injections appear as separate, fully transparent items in the Rivers and Water Supply Commission's annual financial statements for each scheme. These statements are tabled in parliament and they are public documents.

#### *Cressy-Longford Irrigation Scheme*

Water pricing for Cressy-Longford Irrigation Scheme is based on a two-part pricing system with a fixed charge per megalitre of irrigation right and a volumetric charge per megalitre of water actually used to cover variable costs.

In the previous seven years, water prices have risen to achieve full recovery of operational, maintenance, administration and asset consumption costs. This has been achieved by establishing a revenue target and then setting water prices to meet this target, based on the rolling five-year average of water sales. The financial costs (interest and repayment of the loans taken out to establish the scheme) are not included in the revenue target as they are treated as a government subsidy to the scheme. In 1999, the model for full cost recovery was altered to more appropriately account for depreciation through an asset renewal levy. Changes to the cost-recovery model have also involved the staged removal of a cross-subsidy for a specific group of users relying on a pumping system (previously power charges for the pump were paid by all scheme users).

#### *Winnaleah Irrigation Scheme*

Water pricing for Winnaleah Irrigation Scheme is based on a modified two-part pricing system, consisting of a fixed charge per megalitre of irrigation right and a volumetric charge per megalitre of water actually used, with the volumetric charge varying over the irrigation season.

The current pricing system was suggested by scheme users and adopted by the Rivers and Water Supply Commission in 1999–2000. It aims to encourage greater water use in the off-peak seasons and to discourage use (or at least fully account for marginal costs) at the peak of the season. As with Cressy-Longford Irrigation Scheme, the financial costs (interest and repayment of the loans taken out to establish the scheme) are not included in the revenue target as they are treated as a government subsidy to the scheme.

Full cost recovery was achieved in 1998–99. At this time, the costing for asset consumption was changed from straight-line depreciation to an asset renewal levy.

#### *South-East Irrigation Scheme*

Water pricing for South-East Irrigation Scheme is a fixed charge based on the amount of irrigation right held, reflecting the high proportion of fixed costs for the scheme. Over the previous eight years, water prices have risen with the intention of achieving full recovery of operational, maintenance, administration and asset consumption costs by 2006; financial costs (interest and repayment of the loans taken out to establish the scheme) are treated as a government subsidy to the scheme. Modifications to the source of supply for Stage 2 of the scheme has required a modification of the original price path to full cost recovery

The new price path for full cost recovery (chosen by the Rivers and Water Supply Commission) is expected to result in the full recovery of costs by 2010–11. Reductions in staffing costs, maintenance costs (as a result of the switch from on-demand pumping to gravity feed) and asset consumption costs combined with the sale of additional irrigation rights, will spread the scheme costs and hence reduce the cost per megalitre. It is, therefore, expected that full cost recovery will be achieved much sooner than 2010–11 on the above price path.

## Regional Water and Wastewater Businesses

### *Trade Waste Pricing*

The Launceston City Council has developed a trade waste charging policy comprising multiple tariffs based on volume and pollutant loads. So far, 2202 premises have been assessed under the policy, with 422 requiring a permit. A further 169 premises remain to be assessed. Eight premises have been included in the highest category of trade waste permit and transitional arrangements are being negotiated in relation to these premises.

### *Cost Recovery*

In Tasmania, all urban retail water and wastewater services are provided by local government. Pricing principles have been developed by the Government Prices Oversight Commission for local government water provision. They are based on the COAG *Strategic Framework for Water Reform* requirements, as well as other National Competition Policy commitments, including competitive neutrality and the application of full cost attribution.

There are currently 28 local councils providing water and wastewater services. Of these, 17 were considered to be in strict compliance with the ARMCANZ *Full Cost Recovery Guidelines*<sup>4</sup>. The appropriate level of cost recovery under the guidelines is achieved when revenue for the service lies between the upper and lower bound. In the Government Prices Oversight Commission's cost recovery compliance reviews, it was considered that where non-compliance with the guidelines was regarded as marginal, the service would be regarded as being in 'practical compliance' (GPOC, 2004b and 2005).

Councils' compliance with National Competition Policy water reforms is assessed by an annual performance audit by the Government Prices Oversight Commission. For the 2005 audit of performance—for the year ended 30 June 2004—23 of the 28 councils providing water services were found to be in practical compliance with the guidelines, and 21 of the 27 councils providing wastewater services were found to be in practical compliance with the guidelines. Councils providing water services that were not in practical compliance with the guidelines were:

- the Central Highlands—remains in the process of a transition to compliance with full cost recovery under agreed strategies following the results of the 2002 audit
- the Break O'Day and Southern Midlands Councils—achieved results below the lower limit, and
- the Circular Head Council—achieved results above the upper limit.

For the six councils providing wastewater services that were not in practical compliance with the guidelines, one council (Central Highlands) was assessed as recovering below the lower limit. The rate of return of four of the councils exceeded the upper limit and the Glamorgan/Spring Bay Council did not provide a return.

For councils that were not in practical compliance with the guidelines, and who were over-recovering, contributory factors included the period since the last revaluation of council's assets, not budgeting for profits from sale of assets, and budgeted and unbudgeted grants. In many instances, if grants were removed, the councils would have been in practical or strict compliance with the cost-recovery guidelines. For small councils, grants have a significant impact on the rate of return.

The Tasmanian Government has commenced discussions with individual councils regarding issues of non-compliance with National Competition Policy commitments regarding full cost recovery. The Tasmanian Government has indicated that it is committed to ensuring that councils are in a position to address the report findings.

Tasmanian Treasury closely monitors the outcomes of the Government Prices Oversight Commission audits. Following each audit, Treasury corresponds with all councils to indicate those areas of actual or potential non-compliance with the *Urban Water and Wastewater Pricing Guidelines* (DPAC, 2003). Councils are then required to outline to Treasury what strategies they intend to adopt to ensure future compliance. This includes ensuring that those councils recovering the lower bound of costs have in place price paths to bring them to the upper bound.

As part of the Government Prices Oversight Commission pricing review, councils are required to report on externalities within that council as factored into their calculations for full cost recovery. The *Urban Water and*

<sup>4</sup> This was developed as part of the COAG reform process for the 2003–04 financial year

*Wastewater Pricing Guidelines* defines externalities as costs imposed on, or incurred by, entities other than the council, for the prevention or mitigation of environmental damage, and recovered from the council through the imposition of environmental levies or licence fees. Externality costs should be included only where they are actually incurred and paid by the council. Externalities are incorporated into pricing for full cost recovery in the calculations of both the upper and lower limits for full cost recovery, and as such Tasmania has indicated that it is recovering environmental costs under its water and wastewater pricing.

Attachment two to the *Urban Water and Wastewater Pricing Guidelines* titled, 'Full Cost Recovery and Rate of Return Reporting for Water and Wastewater', states that dividend payments should arise only if a dividend is paid to a council from the water or sewerage businesses. At present, council water and wastewater operations in Tasmania are not corporatised as separate businesses. It is recognised that even in the absence of corporatisation, councils may require some or all profits from their water and wastewater businesses to be returned to general revenue, these are in the nature of a 'dividend' payment and should be appropriately disclosed.

### Consumption Based Pricing

#### *Two-part Tariffs*

Current water prices set by many councils, including the larger urban councils, do not include separate access and volumetric components. The absence of full water metering in many municipalities precludes the immediate introduction of volumetric pricing in the form of two-part tariffs.

Current pricing systems for water schemes within local councils' jurisdictions are generally one of several basic types:

- two-part tariffs, with no free allowance<sup>5</sup>
- standard fixed tariff (all consumers pay the same amount)
- fixed tariff proportional to the assessed annual value of the property supplied, or

- fixed charge (standard charge or based on the assessed annual value) for a standard maximum water usage ('free allowance') with an 'excess' charge for volumes used above this amount.

In June 1999, the Government released the Government Prices Oversight Commission's report, *Investigation into the Cost-Effectiveness of Local Councils Implementing Two-Part Pricing for Urban Water Services* (DPAC, 2000a). The Government Prices Oversight Commission guidelines provided a methodology for determining the net present value of a change to two-part pricing, comparing the extra costs involved (for example, capital costs of new meters and meter replacements, costs of extra meter readings and invoicing) with the expenditure savings that might result from two-part pricing (for example, deferred or reduced costs of planned capital works, reduced pumping and treatment costs).

At the time of the review, five schemes in Tasmania were already applying two-part tariffs. A full analysis of the cost-effectiveness of the change to two-part pricing was undertaken for 34 of the 85 water supply schemes where two-part pricing was not currently in place. Of the remaining 51 schemes:

- 40 schemes were eliminated according to a screening test on the cost-effectiveness of two-part pricing developed by Government Prices Oversight Commission, and
- 11 schemes were excluded as a firm commitment had been given by the relevant council to introduce two-part pricing prior to any assessment.

Of the 34 schemes assessed, 26 schemes returned negative values, demonstrating that two-part pricing would not be cost-effective. The remaining eight schemes returned positive values. Subsequently, it was found that the analysis for one of the schemes (the Ross scheme) was incomplete and that two-part tariff pricing was not cost-effective for this scheme. Hence, two-part pricing was found to be cost-effective for only seven schemes.

This process confirmed that 18 water schemes (the seven identified through the review, plus the 11 schemes who had given a firm commitment to introduce two-part pricing prior to the review) should change from their existing pricing

<sup>5</sup> A free allowance is a specified maximum quantity of water consumed before a charge above the fixed charge is incurred.

systems to two-part tariffs. Seventeen of these schemes have now implemented two-part pricing. The remaining scheme, operated by Derwent Valley Council, was due to commence two-part tariffs in July 2002; however, a trial installation of meters resulted in a revision of the costs of metering the scheme, thereby warranting a further cost-effectiveness study. This was completed in July 2002 and established that it would no longer be cost-effective for consumption based pricing to be implemented for the Derwent Valley Council water scheme. The results of the revised cost-effectiveness study were assessed by the Government Prices Oversight Commission and found to be National Competition Policy compliant.

#### *Volumetric Charges*

Tasmania reports that most councils that adopted two-part pricing appear to be setting their volumetric rate above their volumetric costs. The Government Prices Oversight Commission notes that there may be other factors, such as the need to include a marginal capacity cost and externalities arising from environmental issues that may have been taken into account in the setting of the volumetric rate.

There will usually be some categories of cost for which it may not be entirely clear whether the cost is fixed or volume-related. Councils are required to exercise judgement in these cases. A useful rule is to assess what would happen to these costs if, across part or all of the scheme, water consumption were to fall by ten per cent. If it is expected that the likely impact is no change to these costs, they should be treated as fixed costs; otherwise they are variable.

#### *In the Urban Water and Wastewater Pricing Guidelines*

Tasmania acknowledges that, as is consistent with economic theory, the volumetric component should be based on the long run marginal cost of providing water. Tasmania notes that councils that do not yet have long-term projections of water demand or well-developed programs for future capital expenditure, there will be practical difficulties in implementing marginal cost pricing. Accordingly, for many councils, there will be a need for a degree of subjective judgement to be involved in setting the rate for a consumption based water tariff. Councils may be guided to some extent by the proportion of revenue recovered in the form of volumetric charges by water authorities elsewhere in Australia.

Volumetric charges and average variable costs are made public in the annual Government Prices Oversight Commission audit reports. In addition, under the *Local Government Act 1993*, Tasmanian local councils are subject to various accountability measures. These include the requirements that all decisions (including the setting of rates and charges) are made at council meetings and that those meetings are notified, agenda material is made available to the public prior to meetings, and that the meetings are open to the public.

Section 118 of the *Local Government Act 1993* also requires the general manager, within 21 days of the council setting any rates and charges, to publish a summary in a daily newspaper circulating in the municipal area.

A number of councils also provide information sheets with rate notices; circulars and details in council newsletters outline volumetric charges within the council.

#### *Cross-subsidies*

The Tasmanian Government Prices Oversight Commission has identified the use of cross-subsidies by councils that reported rates of return outside the acceptable range. By definition, a cross-subsidy occurs when the consumption by one user or group of users subsidises the consumption by another. The Commission is primarily interested in those instances where, if it is under-performing, the water or wastewater service is being subsidised by the general rate base.

As already reported, six councils' rates of return for water and wastewater services are outside practical compliance limits for full cost recovery. Hence, these services are likely to be subsidising other council activities or being subsidised by the general rate base. In many cases, however, factors that contributed to non-compliance include the period since the last revaluation of council's assets, not budgeting for profits from sale of assets, and budgeted and unbudgeted grants. Therefore, although the Government Prices Oversight Commission has identified possible cross-subsidies within these councils, it considers that when factors contributing to non-compliance are taken into account, the councils are actually making significant progress towards eliminating cross-subsidies and ensuring ongoing compliance with the guidelines.

In its report, the Government Prices Oversight Commission does not comment specifically on the identification and reporting of cross-subsidies between different classes of users of water and wastewater services. Although, the *Urban Water and Wastewater Pricing Guidelines* note that any remaining cross-subsidies should be made transparent by disclosing them separately in any published annual report or financial statements.

#### *Own-use Transfers*

Increases were found in regard to councils' identification of own-use transfers. Own-use transfers are reported by councils in their annual reports. However, the Government Prices Oversight Commission noted that although more councils were identifying own-use consumption, not all councils were identifying or disclosing their use. The Government Prices Oversight Commission observed that all councils must have own-use consumption, and identifying this consumption is necessary to be able to disclose the relevant cross-subsidies. A number of councils that did not report own-use later clarified that either the value of own-use consumption was negligible or that own-use within the council was charged in the same manner as a ratepayer would be charged and thus should not be included under own-use.

The Government Prices Oversight Commission audit reports have found that there is no systematic non-compliance by councils with COAG commitments regarding cross-subsidies or own-use transfers. In cases of non-compliance, the Government Prices Oversight Commission has noted that this non-compliance is primarily due to the receipt of major grants or to one-off events such as the profit from the sale of assets. As such, where councils are not in practical compliance for a specific audit year, it is unlikely that systematic cross-subsidisation is occurring. With respect to councils identified by the Government Prices Oversight Commission as not reporting own-use figures on a continuous basis, Treasury has a policy of negotiating with those councils to ensure that these figures are provided for future audits.

#### *Free Water Allowance*

Many Tasmanian councils that have metered water supplies impose a fixed charge that includes a free water allowance, beyond which a volumetric excess water charge applies.

For councils applying two-part pricing, only a small number have free water allowances in excess of the *Urban Water and Wastewater Pricing Guidelines*.

The guidelines specify that, ideally, all free water allowances should be removed. They can lead to cross-subsidisation, inhibit incentives for economical water use, and undermine the principle of consumption based pricing. In any instances where low level free water allowances are retained, or are to be phased out over time, the Commission would like to see evidence that a significant proportion of customers and water supplied still face a strong volumetric signal. Additionally, if free water allowances are considered necessary, they should not exceed 50 kilolitres per year.

#### *Community Service Obligations*

Councils are to identify and transparently report the size of community service obligations in their annual reports. Treasury considers that the removal of community service obligations is exclusively a council decision, provided they are identified and transparently reported in accordance with the *Community Service Obligation Policy and Guidelines for Local Government in Tasmania* (DPAC, 2000b). Further, the Government Prices Oversight Commission audit reports have found that there is no systematic non-compliance by councils against COAG commitments for community service obligations.

The Government Prices Oversight Commission audit report for 2003–04 identified ten councils as providing community service obligations. The community service obligations ranged in value from \$5,000 to \$123,000 for water businesses and \$1000 to \$42,000 for wastewater businesses. In terms of materiality, community service obligations accounted for a very small fraction of the total revenue obtained by councils' water and wastewater businesses.

The *Urban Water and Wastewater Pricing Guidelines* note that where service deliverers are required to provide water services to classes of customers at less than full cost, this must be fully disclosed and, ideally, be transferred to the water service deliverer as a community service obligation from general council revenue.

## Submissions

The Tasmanian Conservation Trust considers that cost recovery and consumption based pricing by councils for urban water, particularly Hobart City Council, are two long-running issues that the National Competition Council has previously failed to address.

## Discussion and Assessment

### Rural Systems–Cost Recovery

The Commission considers that Tasmania has made significant progress towards meeting the COAG commitment for full cost recovery in rural systems. Tasmania has demonstrated that both the Winnaleah Irrigation Scheme and the Cressy-Longford Irrigation Scheme are recovering at least the lower limit of the COAG pricing benchmark. Tasmania has also demonstrated that the South-East Irrigation Scheme has continued to progress towards pricing that achieves the lower bound of cost recovery as soon as possible.

In order to fully satisfy its COAG commitment for full cost recovery, Tasmania is required to demonstrate that it is continuing to move towards the upper bound where practicable.

### Regional Systems - Trade Waste Pricing

By demonstrating that Launceston City Council has developed a trade waste charging policy the Commission considers that Tasmania has met its COAG commitment for the regional pricing component of the assessment.

### Regional Systems - Cost Recovery

The Commission considers that Tasmania has made significant progress towards meeting its COAG commitment for full cost recovery in regional systems. However there are several outstanding issues that remain for Tasmania to address before it can be said to have fully met its COAG commitments. The Commission notes the concerns raised by the Tasmanian Conservation Trust in relation to this matter.

Tasmania notes that several local councils are over-recovering the costs of providing water and wastewater services, and that three councils are recovering below the lower bound. The Commission notes that for one of

the councils that is under-recovering its costs, there is a process in place for transition to compliance with full cost recovery by 2004–05. For the other two councils, Tasmania has not provided any information on progress towards full cost recovery; however, the Commission notes that the Tasmanian Government has commenced discussions with individual councils regarding issues of non-compliance with National Competition Policy commitments regarding full cost recovery. The Commission also notes that Tasmanian Treasury corresponds with councils on areas of actual or potential non-compliance, and ensures that those councils recovering the lower bound of costs have in place price paths to bring them to the upper bound.

The Commission will maintain a watching brief on Tasmania's progress with moving councils towards the lower bound of cost recovery, and for those councils that are recovering the lower bound, moving them towards the upper bound.

Tasmania has provided information for cost recovery in a single year, and has reported that in this year several councils were over-recovering. The Commission notes that in many cases factors contributing to non-compliance include: the period since the last revaluation of Council's assets, not budgeting for profits from sale of assets, and budgeted and unbudgeted grants. The Commission also notes that Treasury corresponds with councils on areas of actual or potential non-compliance. Tasmania will need to ensure that councils are not consistently recovering above the upper bound.

The Commission notes that councils may require some or all profits from their water and wastewater businesses to be returned to general revenue, and that, as these are in the nature of a 'dividend' payment, they should be appropriately disclosed.

### Regional Systems - Consumption Based Pricing

#### *Two-part Tariffs*

The Commission considers that Tasmania has met its COAG commitment regarding consumption based pricing. Tasmania has demonstrated that it has undertaken a full analysis of the cost-effectiveness of moving towards two-part pricing for local councils, and that where two-part tariffs are not employed, it was not cost-effective to do so.



The Commission notes that where it was found not to be cost-effective for local councils to implement two-part pricing, for example for Hobart City Council, that this is because expenditure savings that might result from two-part pricing were more than outweighed by the capital cost of new meters and meter replacements, the cost of extra meter readings and invoicing. Examples of expenditure savings that might have arisen include: deferred or reduced cost of planned capital works, reduced pumping and treatment costs.

In making this assessment, the Commission notes the concerns of the Tasmanian Conservation Trust in relation to local councils' use of consumption based pricing, especially Hobart City Council. Nevertheless, the Commission's view is that Hobart City Council has adequately investigated the cost-effectiveness of moving towards two-part pricing.

The Commission will continue to monitor the development of two-part pricing in Tasmania, in terms of Tasmania's commitments through the National Water Initiative to implement 'best-practice' pricing. The Commission will also monitor Tasmania's progress in assessing any changes in the cost-effectiveness of introducing two-part tariffs in local councils.

#### *Volumetric Charges*

The Commission considers that Tasmania has made significant progress towards meeting its COAG commitment with regard to this component of the assessment. Tasmania has demonstrated that it has reviewed volumetric charges; however, it has also reported that in many instances councils are setting volumetric rates above volumetric costs. The Commission notes that there may be other factors, such as the need to include a marginal capacity cost and externalities arising from environmental issues that may have been taken into account in the setting of the volumetric rate.

Tasmania has reported that it has identified volumetric cost components and has made these transparent in the annual Government Prices Oversight Commission Audit Report as well as in daily newspapers circulating in the municipal area. The Commission also notes that a number of councils provide information sheets with rate notices, circulars and details in council newsletters outlining volumetric charges within the council.

#### *Free Water Allowance*

The Commission considers that Tasmania has made significant progress towards meeting its COAG commitment with regard to this component of the assessment. The Commission notes that a small number of councils have free water allowances in excess of the *Urban Water and Wastewater Pricing Guidelines*. The Commission also notes that where councils have a large free water allowance, Treasury is seeking to ensure that these are in accordance with the pricing guidelines.

#### *Regional Systems – Cross-subsidies*

The Commission considers that Tasmania has made some progress towards meeting its COAG commitment regarding cross-subsidies and own-use transfers. The Government Prices Oversight Commission audit reports have found that there is no systematic non-compliance with COAG commitments by councils regarding cross-subsidies or own-use transfers. The Commission notes that water users are subsidising council water use, but that this is made transparent through annual reports in which councils are identifying and disclosing own-use consumption. The Commission also notes that, for councils identified by the Government Prices Oversight Commission as not reporting own-use figures on a continuous basis, Treasury has a policy of negotiating with those councils to ensure that these figures are provided for future audits.

#### *Regional Systems - Community Service Obligations*

The Commission considers that Tasmania has made some progress towards meeting its COAG commitment regarding community service obligations. Tasmania has identified, through the *Government Prices Oversight Commission Audit Report 2003–04*, some ten councils that provide community service obligations. These councils have identified and transparently reported on the size of these community service obligations through annual reports.

Tasmania considers that the removal of community service obligations is exclusively a council decision. The Commission notes that Tasmania is required, as part of its COAG commitments, to consider, where practicable, alternative management arrangements aimed at the removing the need for an ongoing community service obligation.

## 7.4.2 Cost Recovery for Planning and Management

### Assessment Issues

Tasmania is required to demonstrate that resource management costs are being recovered, consistent with COAG pricing obligations. In particular Tasmania is required to demonstrate:

- that costs associated with activities undertaken for governments are being recovered
- that prices to recover resource management costs are being independently set or reviewed
- the extent to which costs associated with the provision of licenses for water extraction are being recovered
- the extent to which MDBC costs are being recovered
- the extent to which resource management costs are being recovered
- that resource management costs are transparently handled and publicly reported, and
- that adequate public consultation and education about water management charges has been undertaken.

**In Tasmania, water planning and management costs are recovered through water licence fees and include the costs of the following activities:**

- **regulatory costs, including activities undertaken by the Department of Primary Industries, Water and Environment in regulating the taking of water. These activities are required to ensure that water users comply with the conditions on their licence, including how much water is taken and when and how it is taken**
- **water assessment costs, including activities undertaken by the Department of Primary Industries, Water and Environment to monitor streamflows and water quality for river health monitoring. These activities are undertaken for both public and private good. In establishing principles for setting water fees in 1999, it was considered that water assessment costs should be split between public (80 per cent) and private (20 per cent) good, and**
- **relevant Department of Primary Industries, Water and**

**Environment overhead costs. Under the Government's pricing policy, fees must be set to recover the full costs of providing goods and services, including overhead costs. Using the same rationale as for the water resource assessment and monitoring costs, overhead costs are to be split between public (80 per cent) and private (20 per cent) good.**

**The current fee-setting system relates to water taken from unregulated streams, lakes and groundwater and provides for:**

- **clear separation of public and private good costs incurred in water management**
- **the setting of licence fees to reflect the direct costs attributable to licensees (a standard administrative fee to cover licence issue and a variable management fee to cover factors such as compliance auditing, and streamflow monitoring)**
- **the creation of eight different pricing regions to reflect the variations in the cost of servicing users in different catchments of the state**
- **a broader base for revenue collection to ensure that all direct beneficiaries contribute equitably to the costs of the services provided**
- **a different pricing structure for different types of licences, for example, water taken into storage during winter compared to water taken directly from rivers during summer, and**
- **opportunities for licensees to reduce their costs by changing the level of service received from the government.**

**Current water licence fees have been set in accordance with the outcome of a review of water licence fees undertaken by the Department of Primary Industries, Water and Environment in 2003–04. This review took into account changes in water allocations and water management costs since the fees were established in 2000. The outcome of the review was an increase in the costs that were to be recouped through the fees. Where fees are subject to significant increases, a price path of up to five years has been implemented to provide water users with time to gradually adjust to the new fees.**

The recalculated fees were subject to a four-week public consultation period and Tasmania reports that comments were generally supportive of the fee setting method and the resulting proposed changes to the fees.

The recalculated fees were also reviewed internally by the Corporate Management Division of the Department of Primary Industries, Water and Environment, and externally by the Department of Treasury and Finance. As a result of these reviews, the proposed fees were increased further to better reflect the costs of providing the relevant services. A regulatory impact statement was also prepared to demonstrate that (where the new subordinate legislation imposes a significant cost, burden or disadvantage on a sector of the community) it is necessary, yields a net benefit to the community, and is effective and efficient.

A discussion paper on the new fees was released in April 2005 for a four-week public comment period. On 19 October 2005 the new fees came into force through amendments to the Water Management Regulations, 1999.

In the discussion paper it is stated that the Department of Primary Industries, Water and Environment will run the water fees model against the budgeted water management costs on an annual basis to ensure that costs are being recovered. As a result, fees will be revised appropriately in the following circumstances:

- if the predicted deficit between modelled revenue and budgeted costs is five per cent or more, or
- if the predicted surplus between modelled revenue and budgeted costs is ten per cent or more.

The information for, and results of, these annual reviews will be made publicly available.

Notwithstanding any annual changes to fees, the Department of Primary Industries, Water and Environment will review the structure and methods for calculating the fees every three years.

Both the annual and three yearly reviews will take into consideration the impact of new water licences and allocations and any other relevant factors.

## Submissions

In its submission, the Tasmanian Conservation Trust expresses a concern that the Tasmanian Government is moving too slowly towards full cost recovery for water planning and management costs, especially for issues such as dam assessments and water licence applications. Nevertheless, the Tasmanian Conservation Trust notes that progress is being made in this area.

## Discussion and Assessment

The Commission considers that Tasmania has made significant progress towards addressing its COAG commitments for recovery of water planning and management costs. Tasmania has demonstrated: that costs associated with activities undertaken for governments are being recovered; the extent to which costs associated with the provision of licenses for water extraction are being recovered; the extent to which resource management costs are being recovered; that resource management costs are transparently handled and publicly reported; and that there is adequate public consultation and education about water management charges.

Tasmania has not, however, demonstrated that prices to recover resource management costs are being independently set or reviewed—this is necessary for Tasmania to fully meet its COAG commitments under the National Water Initiative. The Commission notes that Tasmania has externally reviewed water planning and management costs through the Department of Treasury and Finance. The Commission notes the role of the Government Oversight Prices Commission in independently reviewing prices for local water utilities and bulk water authorities and considers that the Government Oversight Prices Commission could play a similar role in independently reviewing resource management costs.

The Commission notes the concerns of the Tasmanian Conservation Trust with regard to the slow progress of Tasmania in recovering water planning and management costs, especially for dam assessments and water licence applications. The Commission will maintain a watching brief on Tasmania in relation to its National Water Initiative commitment to ‘consistent approaches to pricing and attributing costs of water planning and management’.

### 7.4.3 Investment in New or Refurbished Infrastructure

#### Assessment Issue

The Commission will examine compliance where Tasmania has decided to proceed with a particular project. In conducting its assessment, the Commission will consider:

- the extent to which the economic viability\* and ecological sustainability credentials of infrastructure proposals have been established prior to works commencing
- the environmental assessment processes for all projects, whether publicly or privately funded, and
- the economic viability appraisals of new or refurbished infrastructure proposals only where governments contribute funds.

For this assessment, if a decision has been taken to proceed with the dam, the Commission will consider Tasmania's compliance with the COAG obligations on new rural infrastructure. The Commission will consider the economic and environmental studies undertaken by the Australian and Tasmanian Governments, as well as taking into account any information provided by other parties.

\* The NCC 2004 NCP Assessment explained the economic viability test as involving consideration of whether a project will deliver an overall public benefit to Australia. Commercial or financial viability is an important element, "a project that is not commercially viable may still satisfy the economic viability test if there is robust evidence that the project will deliver a net social benefit that outweighs the costs of not being commercially viable".

#### Meander Dam

**The main new investment in infrastructure in Tasmania is Meander Dam. This is the major initiative of the *Water Development Plan* for and, when completed, will be Tasmania's largest irrigation scheme with 24,000 megalitres of water available for irrigation.**

**The Meander Dam proposal, put forward in 2001, is to construct and operate a 43 gigalitre dam on the Meander River to provide water for irrigation, town domestic supplies, and a proposed mini-hydroelectric power plant, and to provide environmental flow requirements for the Meander River. In 2001, the estimated cost of the construction works was \$23 million. The State government committed \$7 million of capital funding for the project, with the Commonwealth agreeing to provide \$2.6 million.**

**As a result of a number of delays, including legal challenges at State and Federal level, progression of the Meander Dam proposal through the statutory approval process was slow. It was not until 18 September 2003, after an open and transparent public review process and a commissioned independent analysis of the economic viability of the proposal, the Commonwealth Minister for the Environment and Heritage approved the construction and operation of the Meander Dam.**

**By the time the Meander Dam proposal was approved, the estimated cost of the project had increased to \$28 million, including \$3.5 million for a mini-hydro scheme. Hydro Tasmania will meet the costs for the hydro generation plant and make a contribution to the capital costs of the dam. The balance of funds was to be provided by the private sector.**

**Tasmania signed a Development Agreement with Sustainable Irrigation Australia-Tasmanian Water Solutions Pty Ltd on 26 July 2005 for the design, construction, financing and operation of the Meander Dam. The Development Approval gave the proponent until 31 October 2005 to demonstrate to the Government that it could satisfy specified conditions; primarily that it could raise sufficient funding for the project.**

**On 31 October 2005 Sustainable Irrigation Australia-Tasmanian Water Solutions Pty Ltd notified the State that it had been unable to secure sufficient project construction finance to fulfil the conditions of the Development Approval. The Development Approval became null and void from that date.**

**On 5 December 2005, the Tasmanian government announced that it had taken over the Meander Dam construction contract that was set up by Sustainable Irrigation Australia-Tasmanian Water Solutions Pty Ltd. In order to raise the funds necessary to manage this contract, the Rivers and Water Supply Commission, a Government Business Enterprise, will be responsible for the sale and lease of water entitlements and borrowing as necessary. The pricing arrangements for the water entitlements have not yet been finalised, but the government has indicated that its objective is to sell the entitlements to recover the balance of the construction cost above the funds previously committed. The Tasmanian government expects that the pricing arrangements will be similar to those proposed by Sustainable Irrigation Australia-Tasmanian Water Solutions**

Pty Ltd (but without the strata title system) but will also include leasing options for farmers who cannot afford to purchase entitlements outright at present.

The State expects to see construction completed in September-October 2007, with water expected to be available to farmers during the 2007-08 irrigation season.

#### *Economic Viability*

Economic analysis completed in July 2003 by Marsden Jacob and Associates provides an independent assessment of economic documents submitted to the Resource Management and Planning Appeal Tribunal in January 2003. This report also includes detailed sensitivity analysis and provides a revised economic and financial evaluation of the proposal.

Using conservative base case assumptions, Marsden Jacob and Associates estimated that the Meander Dam project would generate a real rate of return, or internal rate of return, of 9.2 per cent and a net present value of \$10.7 million at six per cent real discount rate declining to \$3.3 million at eight per cent.

The Tasmanian Government report that, after taking into consideration the increase in the capital costs of the dam works to \$24.5 million (\$28 million less the mini-hydro scheme costs), the net present value for the project reduces to \$9.7 million (internal rate of return of 9.2 per cent at six per cent real discount rate)<sup>6</sup>.

In light of changes in the cost of the project since the Marsden Jacob study, and changes in economic conditions in the industries and communities likely to utilise the water from Meander Dam, the Commission contracted a consultant to undertake a desktop review of the economic viability of the Meander Dam proposal. The review was provided to the Tasmanian government for information. The review indicated that the most likely scenario still has a strongly positive net present value. However, the Commission notes that at the other extreme, given the recent market situation facing the vegetable industry, a pessimistic scenario gives a marginally negative net present value.

#### *Ecological Sustainability*

As part of the development work for the Meander Dam project, a scientifically rigorous assessment was made of the water regime required to protect aquatic ecosystem values in the Meander River. It was concluded that the Meander Dam will be able to provide low-risk environmental flow, in terms of the Environmental Water Requirement. This outcome is consistent with the Water for Ecosystems Policy #2001/1. Water flows from the dam are designed to provide this low-risk environmental flow while not only preserving the existing level of irrigation extractions, but providing a further 24,000 megalitre of irrigation water at high reliability.

The Meander Dam project has been reviewed under the *Environmental Management and Pollution Control Act 1994* and is subject to an Environmental Protection Notice (EPN 635/2) following assessment by the Board of Environmental Management and Pollution Control, Tasmania's peak statutory environmental regulation body. Under the Environmental Protection Notice, a number of environmental management plans must be prepared and submitted for approval to the Director of Environmental Management prior to commencement of any construction activities. These include a Fauna Habitat Management Plan, with specific requirements for the Spotted-tailed Quoll, a Geomorphology Management Plan, Downstream Flora Management Plan and a Weed and Disease Management Plan. The plans must be implemented, monitored and reported for compliance in accordance with the Environmental Protection Notice.

Meander Dam was approved with conditions, including the submission of management plans for the two nationally threatened species, the Union Bridge (*Epacris aff. exserta*) and the Spotted-tailed Quoll (*Dasyurus maculatus*), under the *Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth).

In December 2005 information on the presence of *Eucalyptus ovata* (Swamp Gum) forest community became available. Information on the incidence of this community within the inundation zone may trigger the *Environment Protection and Biodiversity Conservation Act 1999* and require a Forest Practices Plan under the *Forest Practices Act*. These matters will need to be addressed before the project could proceed.

## Submissions

The Tasmanian Conservation Trust outlined a range of issues it considered should prevent the Meander Dam being constructed. The main concern raised was that the assessment of economic viability of the proposed dam, as accepted by the National Competition Council, was based on a capital cost of \$23.5 million, and that the cost of the dam had now increased to \$35 million.

Other issues raised by the Tasmanian Conservation Trust included that the increased requirement for private sector funding has reduced the financial viability of the project to a “marginal level”. The Tasmanian Conservation Trust raised the issue that the insurance adviser to the Tasmanian Government believed that the project requires a higher level of insurance than the Tasmanian Water Solutions Pty Ltd have proposed and that Crown law considers the security of the agreement with Tasmanian Water Solutions Pty Ltd to be ‘weak’.

The Tasmanian Conservation Trust also reported that institutional separation and conflict of interest with respect to the Meander Dam proposal remain an area of significant concern to the Trust. It cited four instances including that ‘the Deputy Chair of the Assessment Committee for Dam Construction (the statutory body that assesses dam applications) is also a partner in a consultancy that has received substantial contracts from both the Tasmanian government and private developers to progress dam applications’.

## Discussion and Assessment

### Meander Dam

Tasmania has reported that the Meander Dam proposal is economically viable and ecologically sustainable.

#### *Economic Viability*

Despite Tasmania commissioning a study by Marsden Jacob Associates in 2003 to investigate the economic viability of the Meander Dam proposal, the Commission notes that economic conditions and the costs of the project had changed between this study and the decision in December 2005 to commence construction of the Dam.

Tasmania did not demonstrate that it had undertaken further work to appraise the economic viability of the proposal prior to work commencing. In discussions with Commission staff, Tasmanian officials indicated their view that economic viability of the Dam proposal did not require further analysis. The Commission does not share this view.

Given changes in economic conditions and the costs of the project in the time that had elapsed between the Marsden Jacob Associates review in July 2003 and the Tasmanian Government’s decision to proceed with the Dam in December 2005, some review of economic viability would have been prudent. Such a review would also have added to public confidence about the decision making process for the proposal.

On the basis of the above, the Commission considers that Tasmania has not fully met its COAG commitment to assess the economic viability of the Meander Dam proposal prior to work commencing.

As noted above, the Commission contracted a desktop review of economic viability. While the scope of the review was constrained (by virtue of its desktop nature) and was subject to important caveats (as are all analyses of economic viability), this work indicated that the project was still likely to be economically viable.

The Commission notes the concerns raised by the Tasmanian Conservation Trust in relation to the increased costs of the Meander Dam proposal and associated economic viability calculations. The recent review of these calculations by an independent consultant on behalf of the Commission goes some of the way towards alleviating these concerns.

The Commission shares the concerns of the Tasmanian Conservation Trust that the increased requirement for private sector funding has potentially reduced the financial viability of the project. The Commission notes that the Tasmanian Government is yet to raise private sector funding through the sale and lease of water entitlements and borrowing. The future financial viability of the Meander Dam project will, of course, depend on the government’s success in raising these funds.

### *Ecological Sustainability*

Tasmania has provided information on the environmental assessment process followed in order to assess the project's ecological sustainability and to manage the project to meet ecological outcomes. The Commission is satisfied that there has been, and remains, a robust process to address ecological aspects of the project. It also notes that changed ecological information may necessitate further assessment. On this basis, the Commission considers that Tasmania has made progress toward its COAG commitment to assess the ecological sustainability of the Meander Dam proposal prior to work commencing.

#### 7.4.4 Release of Unallocated Water

##### Assessment Issues

The Commission will look for Tasmania to demonstrate that any releases of unallocated water, including recycled or other sources of water, are occurring in a manner that complies with its COAG water reform obligations. In particular, the Commission will consider whether:

- water plans have increased allocations to consumptive use
- the water required to achieve environmental outcomes is adequately met prior to the release of unallocated water
- the impact on the environment is considered before any new entitlements are issued
- all other avenues for meeting demand have been carefully examined, and
- market-based mechanisms are employed in the release of unallocated water, including recycled water.

The Commission is interested in the arrangements proposed for allocating water from the Meander Dam to consumptive users.

Tasmania reports that, since 1995, there has been a moratorium on the issuing of new water licences and allocations from most of the state's rivers during the summer period. This is to protect the state's watercourses from overallocation during summer. Any further allocations during the summer period would generally be considered only in the context of a water management plan, under which formal environmental flow requirements can be considered.

Recognising the need to ensure that winter water extractions remain within sustainable limits, the Department of Primary Industries, Water and Environment released *Guidelines to Assess Applications for New Water Allocations from Watercourses During Winter* in 2003 that aim to ensure that future allocation of the state's water resources during winter is undertaken in a sustainable manner and to provide security for existing water entitlement holders.

Tasmania considers that the guidelines provide for a consistent and equitable approach for the granting of new winter water allocations while protecting the health of the state's rivers and estuaries and the rights of existing users.

The guidelines provide an overview regarding the type of information that applicants may be requested to provide to support their application for a water allocation, including the consideration of potential impacts on the flow regime, existing water users, water quality and freshwater ecosystem values.

When total water allocations in a catchment or subcatchment reach a threshold amount, set by basic hydrological modelling, additional information is requested to support any applications for additional allocations. Such information may include:

- hydrological assessments
- an approved environmental flow determination
- evidence that alternative water source options have been investigated
- evidence that the proposed water extraction will not have an unacceptable impact on existing users and the environment, and
- further details on the nature and operation of any dam works.

Tasmania considers that the main advantage for applicants is that the information required in support of an application for a new water allocation is clear, equitable and objective. Since the guidelines were introduced, 24 applicants have been issued with a notice seeking further information to support their application.

### Derwent River

Tasmania reported that environmental investigations of the Lower Derwent have indicated that, during the summer period, a further allocation of up to 150 megalitres per day could be made without significantly impacting on the environment or existing users, providing specific conditions were imposed. This translates to potentially an additional 20,000 megalitres of water to be allocated each summer from the River Derwent downstream of Meadowbank Dam. Because of the findings of the environmental investigations, the moratorium on the granting of new summer water allocations from the River Derwent has been conditionally lifted.

To the middle of 2005, applications had been received by the Department of Primary Industries, Water and Environment for 13,100 megalitres of water mainly to expand horticulture enterprises in the lower Derwent Valley. Specific conditions will be applied to the approval of any water allocations from the Derwent River. Tasmania has not used market mechanisms to allocate the unallocated water in this case. This is because of the relatively low level of demand for new water and because the government has made an explicit decision to release the water for economic development.

### Meander Dam

The Tasmanian report noted that all existing legal entitlements to take water from the Meander River would be preserved when the dam is built. Once the Meander Irrigation District is declared under Part 9 of the *Water Management Act 1999*, the Tasmanian government will be able to grant irrigation rights to irrigators under the *Irrigation Clauses Act 1973*. This means that irrigators with an existing water entitlement under Part 6 of the *Water Management Act 1999* will have two options:

- convert existing licences for summer takes under the *Water Management Act 1999* to irrigation rights under the *Irrigation Clauses Act 1973*, or
- retain their existing water entitlement under Part 6 of the *Water Management Act 1999*.

Tasmania reported that taking of water for irrigation from the Meander River and its tributaries downstream of the Meander Dam under existing licences will be prohibited during periods of low natural flows when the flow at Strath

Bridge is less than 25 megalitres per day. By converting from their Part 6 entitlements to an irrigation right supplied from the dam, irrigators will have greater reliability of water supply.

Also, users who take water directly out of a stream for irrigation, industrial, town water supply, or other commercial purposes will be required to install and maintain a suitable meter on each abstraction point in accordance with Part 11 of the *Water Management Act 1999*.

As noted in Section 7.4.3 on Investment in New or Refurbished Infrastructure, the Tasmanian government intends that much of the cost of building the dam will be recovered from the sale of water access entitlements.

### Discussion and Assessment

The Commission considers that, overall, Tasmania has made satisfactory progress in meeting its COAG commitments regarding the release of unallocated water. Tasmania has stated that there is a moratorium on the issuing of new water licences and allocations from most of the state's rivers during the summer period in order to protect the state's watercourses from overallocation during summer. Further allocations during the summer period are considered only in the context of a Water Management Plan under which formal environmental flow requirements can be considered. Tasmania also reports that future allocation of the state's water resources during winter will be undertaken in a sustainable manner. As a result, the Commission considers that Tasmania has satisfactorily met its COAG commitment to achieve environmental outcomes prior to the release of unallocated water.

Tasmania has provided information on the *Guidelines To Assess Applications For New Water Allocations From Watercourses During Winter* in which applicants are requested to provide information on the impact of new allocations on the environment. As a result, the Commission considers that Tasmania has satisfactorily demonstrated that the impact on the environment is considered before any new entitlements are issued.

The Commission notes that for unallocated water released from the Derwent River, Tasmania has not used market mechanisms to allocate the unallocated water given the



relatively low level of demand for new water and given that the Government has made an explicit decision to release the water for economic development. Tasmania has also not provided any information indicating that market mechanisms will be used to allocate unallocated water from Meander Dam. The Commission notes that even in the case of unallocated water released for economic development, the use of market mechanisms will assist in ensuring that water is allocated to its highest value use. This is, of course, dependent on there being some scarcity in water supply and sufficient demand for new water.

#### 7.4.5 Environmental Externalities

##### Assessment Issues

The Commission will look for Tasmania to:

- report the extent to which they are identifying and recovering environmental costs through their pricing regimes
- provide evidence that environmental costs imposed on and incurred by water businesses are transparently passed on through prices charged to water users
- where externalities are not included in pricing regimes, demonstrate price paths that will move towards achieving full cost recovery within a reasonable timeframe, and
- where not transparently incorporated into pricing regimes, show that they have identified externalities and, after examination, have concluded that inclusion of an externality in pricing is not feasible or practical.

Tasmania should also demonstrate that externalities:

- are being treated in a robust and transparent manner, and
- are being incorporated into pricing for full cost recovery.

**Tasmania's *Urban Water and Wastewater Pricing Guidelines* defines environmental externalities in the urban sector as costs that are imposed on, or incurred by, entities other than local councils for the prevention or mitigation of environmental damage. They are recovered from local councils through environmental levies or licence fees. Externality costs should be included only where they are actually incurred and paid by local councils.**

Externalities are incorporated into pricing for full cost recovery in the calculations of both the upper and lower limits for full cost recovery and, as such, Tasmania is recovering environmental costs in the urban sector under its water and wastewater pricing.

In the rural sector, environmental externalities can be considered in two contexts—those charges that are passed on to irrigators sourcing water from publicly-owned infrastructure; and those charges incurred by irrigators who take water directly through an authorisation of a licence under the *Water Management Act 1999*.

Charges passed on to irrigators sourcing water from publicly-owned infrastructure include water quality monitoring and resource management costs. These costs are passed on to irrigators through water and other operating costs charged by the Rivers and Water Supply Commission.

The fee structure for charges incurred by irrigators who take water directly through an authorisation of a licence under the *Water Management Act 1999* are discussed in detail in Section 7.2 on Water Access Entitlements and Planning Framework. The fees include the recovery of costs:

- associated with the private good component of government activities relating to water assessment
- associated with water quality and assessment that are directly related to managing externalities, and
- of compliance activities undertaken by the Department of Primary Industries, Water and Environment that are required to ensure that water users comply with the conditions on their licence, including how much water is taken, when it is taken, and how it is taken.

To assist in the measurement of water use, the Department of Primary Industries, Water and Environment has commenced a policy to implement metering for all commercial takes from intensively used water resources within five years. Under the policy, water users are responsible for the costs of meter purchase and installation.

## Discussion and Assessment

**The Commission considers that Tasmania has made significant progress towards meeting its COAG commitments for this component of the assessment. Tasmania has demonstrated that, in both the urban and rural water sectors, externalities are being identified and recovered through prices charged to water users, or through licence fees. Tasmania has also demonstrated that, in the urban sector, externalities are incorporated into pricing for full cost recovery in the calculations of both the upper and lower limits for full cost recovery.**

**The Commission will maintain a watching brief on Tasmania with regards to externalities to ensure that Tasmania has identified all of the environmental impacts stemming from commercial use of water.**

### 7.4.6 Institutional Reform

#### Assessment Issues

##### *Independent economic regulation*

Tasmania is required to provide information on the role of economic regulators in setting or reviewing prices, or price setting processes, and the extent to which conflicts of interest are addressed where the water industry regulator and the service provider are responsible to the same Minister.

The Commission is interested in the public reporting and consultation aspects of the independent body's work, as well as its findings in relation to pricing compliance. Where the independent body's role is to review rather than set prices, the Commission will examine the manner in which the results of reviews are addressed by the relevant government, especially where pricing decisions are at variance with pricing recommendations.

##### *Participation in benchmarking processes*

The Commission will look for Tasmania to demonstrate that participation in national processes for inter-agency comparisons and benchmarking, and benchmarking systems managed by WSAA, AWA and ANCID is continuing. Tasmania is also required to demonstrate that there has not been a decline in participation, for metropolitan, non-major urban and rural service providers.

##### *Benchmarking the performance of water authorities – progress with development of a national framework*

Tasmania is required to demonstrate that it has made progress with the development of a national framework for benchmarking of pricing and service quality for metropolitan, non-metropolitan and rural water delivery agencies, including whether appropriate consultation has occurred.

##### *Institutional separation*

Tasmania is required to demonstrate that its institutional arrangements are transparent and continue to provide adequate safeguards. Tasmania is also required to report on the status of the Bill and draft regulations that specify complaints procedures for local governments.

##### Independent Economic Regulation

**The Tasmanian Government Prices Oversight Commission was established under the *Tasmanian Government Prices Oversight Act 1995*, which commenced on 1 January 1996. The Government Prices Oversight Commission is an independent body with responsibility for conducting investigations into the pricing policies and practices of government business enterprises, government agencies, and local government bodies that are monopoly, or near monopoly, suppliers of goods and services in Tasmania.**

**In the case of bulk water authorities, the Government Prices Oversight Commission undertakes an investigation into pricing every three years, making recommendations about maximum prices (which can include maximum revenues) and pricing principles to apply for the next three-year period. The Minister Assisting the Premier on Local Government, upon advice from the Treasurer, subsequently issues a determination for each bulk water authority setting out prices or revenues for three years after the final report is issued.**

**For local councils providing urban retail water and wastewater services, the Government Prices Oversight Commission undertakes an annual review of compliance by councils with the *Urban Water and Wastewater Pricing Guidelines, 2003* for the previous year. The review is provided to the minister responsible for administering the *Government Prices Oversight Commission Act* (currently the Minister Assisting the Premier on Local Government).**

### Participation in Benchmarking Processes

Tasmania participates in the national performance monitoring and benchmarking program for major urban utilities run by the Water Services Association of Australia, which includes Hobart Water. Tasmania also provided information on the operations of Esk Water and Cradle Coast Water for the performance monitoring and benchmarking program run by the Australian Water Association.

Tasmania no longer provides detailed information to the Australian National Committee on Irrigation and Drainage on the performance of the three irrigation schemes in Tasmania, as it was deemed to be no longer cost-effective to do so. The three irrigation schemes still do provide basic Tier 1 statistics for Australian National Committee on Irrigation and Drainage reporting.

Within Tasmania, performance reporting is undertaken by the Department of Treasury and Finance for the three bulk water authorities and by the Department of Premier and Cabinet for local councils. The Rivers and Water Supply Commission do their own performance reporting.

### Institutional Separation

#### *Responsibility for Water Management*

Prior to the commencement of the *Water Management Act 1999*, there were several public and private bodies managing water resources in the state, for example, the Rivers and Water Supply Commission, Hydro Tasmania, Mineral Resources Tasmania, councils and private companies. Almost all of these bodies also had responsibilities for the provision of water services.

Under the *Water Management Act 1999*, the responsibility for management of all of the state's freshwater resources is vested in the Minister for Primary Industries and Water. The Department of Primary Industries, Water and Environment is responsible for the implementation of the provisions of the Act. All service providers, including the Rivers and Water Supply Commission, councils and Hydro Tasmania, require licences to take water.

The *Rivers and Water Supply Commission Act 1999* was also proclaimed on 1 January 2000. It makes provision for the continuation of the Rivers and Water Supply Commission as a government business enterprise with responsibility for the commercial management of government water schemes. The Rivers and Water Supply Commission now has

no natural resource management role, other than to meet the conditions of its water licences or to implement a water management plan, as discussed below.

Under the *Water Management Act 1999*, service providers can manage water resources either as part of their licence conditions or under an approved water management plan. In these situations, the Department of Primary Industries, Water and Environment is accountable for compliance auditing of the provider to ensure that the agreed licence conditions or water management requirements of the water management plan are met.

#### *Service Provision*

Under the *Water Management Act 1999*, the Department of Primary Industries, Water and Environment no longer has a role in the delivery of water services. The transfer of responsibility for major urban water services to local government leaves the Prosser Water Supply Scheme as the only state government-owned urban water supply scheme. This scheme is currently operated by Glamorgan/Spring Bay Council under contract to the Rivers and Water Supply Commission and serves several small towns on the east coast. The full transfer of this scheme is being negotiated with the Glamorgan/Spring Bay Council; an agreement will be finalised by June 2006.

#### *Other Changes to Institutional Arrangements*

The establishment of Hobart Water, Esk Water and Cradle Coast Water as joint authorities was based on the following principles:

- all of the major customer councils within the region must be involved
- the bulk supply joint authority must function at arm's length from the councils involved and in a proper commercial manner, and
- appointments to the board of the joint authority must be on the basis of skills and experience to manage a bulk water supply, as distinct from representative experience.

The transfer of the bulk water authorities from the state government to local government was conditional upon assurances from local government that the bulk water operations will be conducted in a manner that enables the state to meet its National Competition Policy water reform commitments.

The establishment of the Rivers and Water Supply Commission as a government business enterprise in 1995 has led to a greater commercial focus for the operation of government-owned irrigation, water supply, riverworks and drainage schemes. Under the *Government Business Enterprise Act 1995*, the Rivers and Water Supply Commission is a joint responsibility of the stakeholder minister (the Treasurer) and the portfolio minister (the Minister for Primary Industries and Water).

The Rivers and Water Supply Commission must meet its responsibilities in accordance with a ministerial charter under Division 1 of Part 6, and an annual corporate plan under Division 2 of Part 6 of the *Government Business Enterprise Act 1995*.

The Rivers and Water Supply Commission sets water prices under section 48 of the *Irrigation Clauses Act 1973*, in accordance with the requirements of the *Government Business Enterprise Act 1995*.

Under section 24 of the *Government Prices Oversight Act 1995*, the Treasurer may direct the Government Prices Oversight Commission to undertake an investigation into the pricing policies of a monopoly provider. The Rivers and Water Supply Commission may, therefore, potentially be declared to be a monopoly provider under the Act.

#### *Local Government Complaints Handling Processes*

The Local Government Amendment Act 2005 commenced on 1 July 2005. This Act amends the *Local Government Act 1993* and introduces a requirement for councils to adopt a customer service charter by 1 January 2006 (section 339F). A charter is to specify customer service principles, a procedure for dealing with complaints, and any prescribed matters.

Regulation 30 of the Local Government (General) Regulations 2005 requires that a charter include the manner of making a complaint, how to respond to complaints, opportunities for review by the general manager, timeframes for handling complaints, and reporting requirements.

## Discussion and Assessment

### Independent Economic Regulation

The Commission considers that Tasmania has made significant progress towards meeting its COAG commitments

for this component of the assessment. Tasmania has demonstrated that it has an economic regulator, the Government Prices Oversight Commission. That organisation is responsible for annually reviewing prices charged by local government councils that provide urban retail water and wastewater services. It also recommends maximum prices for bulk water supply authorities to apply for a period of three years.

The Commission notes that both the Government Prices Oversight Commission and water service providers are responsible to the same minister. The Commission will maintain a watching brief on Tasmania in dealing with any conflicts of interest that may arise as a result of these two bodies reporting to the same minister.

The Commission will also monitor Tasmania's progress in ensuring that the Government Prices Oversight Commission undertakes public reporting and consultation.

### Participation in Benchmarking Processes and Progress with Development of a National Benchmarking Framework

The Commission considers that Tasmania has made progress towards meeting its COAG commitments for this component of the assessment. Tasmania has demonstrated that it is actively participating in national benchmarking processes for urban water and that it undertakes performance reporting at a state level for bulk water authorities and local councils. The Commission notes that Tasmania does not currently participate in a national or state-level performance monitoring program for irrigation schemes because it is not cost effective to do so. The Commission also notes that Tasmania is contributing towards development of a national benchmarking framework under the National Water Initiative.

### Institutional Separation

The Commission considers that Tasmania has made significant progress towards addressing its COAG commitments for this component of the assessment. The Commission notes the information provided by Tasmania on institutional arrangements. Tasmania has also provided information on draft regulations that specify complaints procedures for local government and also on current institutional arrangements.

## 7.5 Integrating Water Management for Environmental and Other Public Benefit Outcomes

### 7.5.1 Institutional Arrangements

#### Assessment Issues

Water planning frameworks are to provide for adaptive management of surface and groundwater systems in order to meet productive, environmental and other public benefit outcomes; to identify the environmental and other public benefit outcomes sought for water systems; and to develop and implement management practices and institutional arrangements that will achieve those outcomes.

To this end, Tasmania has agreed to establish effective and efficient management and institutional arrangements under the National Water Initiative.

For the 2005 National Competition Policy assessment, the Commission is looking for Tasmania to have progressed its implementation of effective and efficient management and institutional arrangements to ensure the achievement of environmental outcomes.

The Commission is also looking for Tasmania to describe the public education and consultation activities undertaken in relation to the integrated management of environmental water.

#### Effective and Efficient Management and Institutional Arrangements

Tasmania's *Water Management Act 1999* provides for formal allocations of water for the environment. This can occur through a general responsibility to take account of environmental needs in any water management decisions, or through a specific requirement to stipulate environmental water provisions in water management plans.

Environmental water provisions in water management plans are designed to implement specific environmental objectives, for example:

- provide a flow regime to conserve important freshwater ecosystem values
- provide flows to protect locally important geomorphic and ecological processes, and

- provide healthy refuges for in-stream communities during periods of low flow (resembling natural flow regimes).

Numerous elements inform the establishment of environmental objectives within individual water management plans, including:

- protected environmental values and water quality objectives established under the State Policy on Water Quality Management 1997; protected environmental values represent current values and uses of waterways
- resource condition targets for, and monitoring information provided by the regional natural resource management strategies
- conservation priorities established by the Conservation of Freshwater Ecosystems Values Project, which identifies conservation priorities for the freshwater ecosystems of the state's rivers and streams, lakes, wetlands, estuaries and for groundwater dependent ecosystems. This information provides the baseline information for determining a plan's environmental objectives, and
- river health information, particularly the data provided to support *Tasmania Together* indicator 24.7.2 'Number of sampling sites which maintain or improve their AusRivAS bands and number of sampling sites which deteriorate.'

In the absence of water management plans, Tasmania's streamflow, water quality and river health baseline monitoring network provides an early warning mechanism for any environmental issues. Tasmania reported that monitoring to date indicates that current water use is not adversely impacting river health in these catchments.

The organisational arrangements for managing environmental water under the *Water Management Act 1999* include the following.

The Department of Primary Industries, Water and Environment is responsible for:

- preparing water management plans in consultation with water management planning consultative groups, and
- implementing water management plans, including environmental provisions. Water users within a catchment can apply to the Minister for Primary Industries and Water to take over implementation of a plan, although this has not yet occurred.

In situations where water management plans are administered by water entities, the Department of Primary Industries, Water and Environment is accountable for compliance auditing the entity to ensure it is carrying out its activities in accordance with the plan.

Other features of environmental water management that Tasmania considers significant are discussed below.

#### *Audit, Review and Public Reporting Procedures*

Water management plans outline monitoring and reporting activities that will be undertaken during the life of the plan. Tasmania reported that these activities aim to provide publicly-accessible information that can be used to improve the management provisions within a plan when it is due for statutory review. Each plan has a specific timeframe for review and the *Water Management Act 1999* provides other triggers for a review.

#### *Inter-connected Surface and Groundwater Systems*

Groundwater management provisions are included in water management plans where appropriate if, for instance, an aquifer or interconnected surface waterbody is considered to be under threat from over-extraction or contamination. These provisions may cover issues such as groundwater licensing and allocation, monitoring, and well construction and maintenance.

#### *High Conservation-value Rivers, Reaches and Groundwater Areas*

As mentioned previously, conservation priorities in Tasmania are established by the Conservation of Freshwater Ecosystems Values Project. A statewide audit has identified conservation priorities for the freshwater ecosystems of Tasmania's rivers and streams, lakes, wetlands, estuaries and for groundwater dependent ecosystems.

Tasmania has indicated that during 2005–06, the Department of Primary Industries, Water and Environment will begin integrating the data obtained from the statewide audit into statutory planning and approval processes such as water management planning, application for water licences, and permits for dam works.

#### *Public Education and Consultation Activities*

Tasmania reported that, since the 2004 National Competition Policy assessment, it has undertaken public consultation on a range of water related issues including:

- a two-month public comment period in relation to the operation of the *Water Management Act 1999* and related legislation
- public consultation in relation to proposed legislative amendments (the *Water Legislation Amendment Act 2004* and the *Water Legislation Amendment Act 2005*), and
- a discussion paper was released for comment in relation to generic principles for water management planning prior to their finalisation.

Each issue contained elements relevant to the integrated management of environmental water.

In terms of public education and consultation to support water management planning, Tasmania has also established consultative groups for the development of all existing water management plans. These groups advise the Department of Primary Industries, Water and Environment on local water management issues; seek advice from their representative organisations; represent economic, social and environmental interests; and facilitate education of, and dialogue with, respective stakeholder groups. Representation on the groups depends on the particular issues facing a catchment.

Environmental water provisions within water management plans need to take account of outcomes of consultation with local stakeholders to determine important environmental, recreational and commercial values and other relevant interests and local concerns. Tasmania reported that since the 2004 National Competition Policy assessment, an estimated 20 such public and stakeholder meetings have been undertaken by the Department of Primary Industries, Water and Environment.

## Discussion and Assessment

### *Effective and Efficient Management and Institutional Arrangements*

Tasmania recognises environmental water under its *Water Management Act 1999*. Environmental water requirements must be considered in any water management decisions, and formal allocations of water for the environment must be provided within water management plans. Tasmania has a number of supporting statewide principles and policies for guiding decisions about environmental water, both within and outside the context of water management plans.

The Commission acknowledges that Tasmania has established management and institutional arrangements to support implementation of the environmental water provisions under the *Water Management Act 1999*. These arrangements provide for adaptive management of surface and groundwater systems (such as monitoring and reporting programs established within water management plans). They also clearly identify the environmental and other public benefit outcomes sought for water systems (such as environmental flow assessments, and environmental objectives within water management plans).

The Commission notes that Tasmania has identified the Department of Primary Industries, Water and Environment as its environmental water manager, unless the Minister for Primary Industries and Water approves an alternative water entity within the catchment to take over the implementation of the plan.

The Commission is aware that recent amendments have improved the capacity of the *Water Management Act 1999* to deal with groundwater, enabling Tasmania to improve management of groundwater and surface water interactions in the short to medium term.

The Commission understands that water management plans describe monitoring and review procedures for assessing environmental water outcomes. Both activities are the responsibility of the environmental water manager.

The Commission is concerned that Tasmania does not have arrangements for facilitating independent review of water management plan outcomes. The Commission will look for Tasmania to develop independent audit and public reporting of environmental outcomes in order to meet its COAG commitments.

The Commission notes that Tasmania does not have the ability for environmental water managers to trade environmental water on the temporary market. There is no indication from Tasmania that it intends to incorporate this feature into its environmental water management arrangements.

For this assessment, the Commission considers that Tasmania has made satisfactory progress towards meeting its COAG commitment in this area.

## Public Education and Consultation

The Commission considers that Tasmania has public education and consultation mechanisms in place in relation to the integrated management of environmental water. The information programs that support the development of water management plans include consultation phases and public education activities. The water management planning process also incorporates public consultation and education through consultative groups, public meetings and formal public comment period upon the release of draft water management plans.

As such, the Commission considers that Tasmania has made satisfactory progress towards meeting its COAG commitment in this area.

## 7.6 Water Resource Accounting

### 7.6.1 Benchmarking of Accounting Systems

#### Assessment Issues

The Commission is looking for Tasmania to be actively engaged in the national benchmarking of jurisdictional water accounting systems, to allow for the development of a national framework for comparison of water accounting systems to encourage continuous improvement leading to the adoption of best practice.

Tasmania is involved in a national process to benchmark water accounting systems. Through this process, Tasmania has committed to provide full access to their existing water accounting and entitlement registry systems and to other relevant water databases.

#### Discussion and Assessment

The Commission considers that Tasmania is satisfactorily progressing its COAG commitment to benchmark existing water accounting systems.

### 7.6.2 Consolidated Water Accounts

#### Assessment Issue

Tasmania is to identify situations where close interaction between groundwater aquifers and streamflow exist by the end of 2005, to support the integration of accounting for groundwater and surface water use.

Tasmania has advised that the proposed project, *Better information for better outcomes – enhancing water planning in Tasmania*, will enable it to develop hydrological models to identify the state's surface and groundwater interactions. Under this project, Tasmania will develop integrated water balance models for surface and groundwater for up to 20 systems. The aim is to support the management of these systems as a single resource where necessary. The project is scheduled for completion in 2007.

### Discussion and Assessment

The Commission notes Tasmania is working to identify surface and groundwater interactions and encourages Tasmania to give this issue a high priority. The Commission also notes that Tasmania is engaged in a national process to develop accounting system standards and guidelines.

The Commission considers that Tasmania is satisfactorily progressing its COAG commitments to consolidated water accounts.

#### 7.6.3 Environmental Water Accounting

##### Assessment Issues

The Commission is looking for Tasmania to have commenced the development of:

- a compatible register of new and existing environmental water, showing all relevant details of source, location, volume, security, use, environmental outcomes sought, and type, and
- annual reporting arrangements to include reporting on the environmental water rules, whether or not they were activated in a particular year, the extent to which rules were implemented and the overall effectiveness of the use of resources in the context of the environmental and other public benefit outcomes sought and achieved.

Tasmania is engaged in the national process to develop and adopt characteristics for compatible environmental water registers and principles for environmental water accounting. Through this process, Tasmania will develop pathways to establish a register of any environmental entitlements in the same manner as consumptive entitlements, and will continue to work to develop approaches for the registration of water that is provided for the environment on a rules basis.

### Discussion and Assessment

The Commission considers that Tasmania is satisfactorily progressing its COAG commitments to environmental water accounting.

#### 7.6.4 Reporting

##### Assessment Issue

The Commission expects Tasmania to be engaged in a process to develop national guidelines covering the application, scale, detail and frequency for open reporting, addressing:

- metered water use and associated compliance and enforcement actions
- trade outcomes
- environmental water releases and management actions, and
- availability of water access entitlements against the rules for availability and use.

Tasmania currently provides public information on water entitlements, use, trades in major surface water systems through its Water Information Management System (WIMS).

Tasmania is currently participating in a national process to develop national water accounting and reporting guidelines that will be applied to its existing and any expanded systems.

### Discussion and Assessment

The Commission considers that Tasmania is satisfactorily progressing its COAG commitment to developing national guidelines for reporting water use and management information.

#### 7.7 Urban Water

##### 7.7.1 Demand Management

##### Assessment Issues

The Commission will assess:

- whether Tasmania has implemented the Water Efficiency Labelling and Standards Scheme, including mandatory labelling and minimum standards for agreed appliances, and are undertaking compliance monitoring, and



- the extent to which the implementation of the Water Efficiency Labelling and Standards Scheme has been actively communicated to consumers.

The Commission will also look for Tasmania to report on progress with the review of water restrictions and the implementation of management responses to supply and discharge system losses.

**The Tasmanian Legislative Council passed the *Water Efficiency Labelling and Standards Bill 2005* on 31 August 2005. The Bill, when proclaimed, will provide for water efficiency labelling and the making of water efficiency standards and enable Tasmania's participation in the national Water Efficiency Labelling and Standards Scheme. Tasmania has held various information and training sessions for various stakeholder groups regarding the implementation of the scheme. Further information sessions are planned as part of the state government's Living Environment Program.**

## Discussion and Assessment

**The Commission considers that Tasmania has met its COAG commitments in relation to the Water Efficiency Labelling and Standards Scheme. The review of water restrictions and the implementation of management responses to supply and discharge system losses are ongoing actions.**

### 7.7.2 Innovation and Capacity Building to Create Water Sensitive Australian Cities

#### Assessment Issues

The Commission will assess whether Victoria has:

- developed and applied national health and environmental guidelines for recycled water and stormwater
- commenced a process to evaluate existing 'icon' water sensitive urban developments to identify knowledge gaps and lessons for future strategically located developments, and
- undertaken adequate public consultation and education as part of these commitments.

#### Recycled Water and Stormwater Guidelines

**The Tasmanian Government is supporting the development of the national water recycling guidelines. Environmental**

**guidelines for the use of recycled water in Tasmania were released in 2003 and will be reviewed in 2008. These guidelines provide a framework to allow the sustainable reuse and recycling of wastewater in a manner that is safe and practical for agriculture, the environment and the public.**

**The draft Tasmanian Stormwater Strategy was released in 2003 and will be finalised in 2006. It is expected that the strategy will be supported through actions under the state government's Living Environment Program. The strategy was the basis for the development of a model stormwater management plan for the New Town area by the Derwent Estuary Program (Derwent Estuary Program, 2005).**

**Evaluation – 'icon' Water Sensitive Urban Developments Tasmania will foster innovation and capacity building to create water sensitive cities through the Living Environment Program. Under this program, some \$4.6 million of funding will be used to improve the environment of Tasmania's cities and towns over the next three years. Funding will cover issues such as waste, noise, water, contaminated sites, and litter and links to a number of benchmarks identified through the *Tasmania Together* process.**

**The Derwent Estuary Program has released a detailed Water Sensitive Urban Design engineering procedures manual to encourage and facilitate the adoption of water sensitive urban design in Southern Tasmania. Public comment is currently being sought on the draft manual.**

## Discussion and Assessment

**The Commission notes that Tasmania has released a detailed Water Sensitive Urban Design engineering procedure manual to encourage and facilitate the adoption of water sensitive urban design in Southern Tasmania. There is, however, little evidence of processes to review these procedures or evaluate existing 'icon' water sensitive urban developments. The Commission will look for further progress to be made by Tasmania to meet COAG Commitments in relation to innovation and capacity building for water sensitive cities.**

## 7.8 Community Partnership and Adjustment

### Assessment Issues

The Commission will be examining Tasmania's public consultation and education arrangements for consistency with its COAG obligations, for all aspects of the COAG water reform agenda. Particular assessment items are identified under each relevant section of this assessment framework.

With regard to addressing adjustment issues, the Commission will be looking for Tasmania to demonstrate its commitment to close engagement with affected parties on possible responses, including consideration of, at least, the factors outlined in paragraph 97(i) of the National Water Initiative.

### Public Consultation and Education Arrangements

Tasmania has consulted with the community and water industry stakeholders on a range of water reform areas. Previous sections of this assessment detail Tasmania's consultation and education initiatives in relation to water resource planning, water pricing, environmental water and urban water.

In summary, since March 2004 the Department of Primary Industries, Water and Environment has undertaken public consultation on a number of water related issues including:

- a two-month public comment period in relation to the operation of the *Water Management Act 1999* and related legislation
- public consultation in relation to proposed legislative amendments (*Water Legislation Amendment Act 2004* and *Water Legislation Amendment Act 2005*)
- a discussion paper (including a Regulatory Impact Statement for three of the fees) was prepared and released for public comment on proposed amendments to fees payable under the *Water Management Act 1999* (DPIWE, 2005f)
- a discussion paper was prepared and released for comment in relation to generic principles for water management planning
- consultation as part of the development of water management plans including statutory public comment

periods four draft water management plans (Little Swanport, Mersey, Lakes Sorell and Crescent and River Clyde), and

- consultation as part of the Water Use Sustainability Project in 12 catchments (to date 20 public meetings have been held with irrigators since the commencement of Water Use Sustainability Project in September 2003).

Tasmania also considers that its public consultation has been enhanced with the establishment of Consultative Groups/Working Groups. This process has assisted the Department of Primary Industries, Water and Environment in ensuring that key stakeholders are involved and informed in key water resource management issues. Such groups are established for development of water management plans, the implementation of the Water Use Sustainability Project, and for the establishment of water districts and trusts.

### Adjustment Issues

Tasmania reported to the Commission that it does not have any overallocated river systems, and consequently a formal approach to dealing with adjustment is not warranted. Nevertheless, processes such as water management planning and the Water Use Sustainability Project provide mechanisms for consultation with the community where some modification of water management practices is necessary to ensure sustainable outcomes are achieved.

Water management plans include a statement of the objectives of a water management plan that cover environmental, social and economic issues. The objectives of a water management plan provide starting points from which the community can ensure trade-offs are negotiated, and the process established for any adjustment to occur as a result of changes in water entitlements.

The Water Use Sustainability Project also provides for adjustment in advance of the formal water management planning process. The Water Use Sustainability Project provides for the formal recognition of historical water use as lower surety water and also develops restriction management protocols to sustain the environmental values of the catchment.

## Discussion and Assessment

Tasmania's water planning processes are well developed, and incorporate public consultation and education through consultative groups, public meetings and formal public comment period upon the release of draft water management plans. The Department of Primary Industries, Water and Environment also provides a significant amount of policy documentation on its website ([www.dpiwe.tas.gov.au](http://www.dpiwe.tas.gov.au)). The Commission notes that the Department of Primary Industries, Water and Environment has taken steps to improve its methods of community engagement following the completion of planning for the Great Forester River.

Given the lack of overallocated rivers in Tasmania, its processes for assisting those affected by changes in water allocations and requiring adjustment are less well developed. The Commission considers that Tasmania could make clearer its processes for considering adjustment measures, and the measures it may use to assist with any adjustments.

The Commission considers that Tasmania has made significant progress towards meeting its COAG commitments in this area.

### 7.9 National Water Quality Management Strategy

#### Assessment Issues

The Commission is looking for Tasmania to demonstrate continued and active implementation of the National Water Quality Management Strategy (NWQMS). In undertaking this assessment, the Commission will be guided by the expectations identified in the 2001 paper on implementation and the approach taken in previous National Competition Policy assessments. The Commission will consider the extent to which the implementation of other water reform commitments recognises and gives effect to the NWQMS. For the 2005 National Competition Policy assessment, the Commission will consider Tasmania's implementation of guidelines that have been finalised since the last assessment.

Tasmania should report on progress in developing water quality objectives, and progress in implementing the State Water Quality Monitoring Strategy.

#### Implementation

In 2001 Tasmania agreed to a two-yearly review of its implementation of NWQMS guidelines and the 2003 National Competition Policy assessment (NCC, 2003a) examined Tasmania's progress, in accordance with this timeframe. The 2003 National Competition Policy assessment found that Tasmania was making satisfactory progress in implementing policies that reflect the NWQMS framework.

Tasmania has continued to implement the key elements of the NWQMS through its State Policy on Water Quality Management 1997. The policy establishes a water quality management framework with the setting of environmental values and water quality objectives. It also provides a framework for the management of point and diffuse sources of pollution.

Protected environmental values have now been set for the majority of Tasmania's fresh and estuarine waters, and are publicly-available on the Department of Primary Industries, Water and Environment website ([www.dpiwe.tas.gov.au](http://www.dpiwe.tas.gov.au)). The process of setting protected environmental values for fresh and estuarine waters has involved community consultation and negotiated agreements between the board of the Environmental Management and Pollution Control Board (an independent statutory body) and relevant planning authorities.

The Commission understands that protected environmental values will be incorporated into park management plans, used for natural resource management, and considered in water management planning.

Tasmania has indicated that a lack of data, and a lack of appropriate ecosystem-based protected environmental values have both caused difficulties with the value-setting process for groundwaters and coastal waters. Tasmania intends to address these issues in the 2006 review of the *State Policy on Water Quality Management 1997*. A public consultation process to set protected environmental values for coastal waters and to establish interim protected environmental values for groundwater will commence once the review is complete.

#### *Water Reform Commitments*

The Department of Primary Industries, Water and Environment is developing statutory water management plans to determine future water allocations for watercourses, lakes and groundwater areas. Protected environmental values and water quality objectives developed under the State Policy on Water Quality Management 1997 inform the development of environmental objectives, and the subsequent environmental water provisions within these plans. Environmental water provisions are required to ensure that the values and objectives are not compromised.

#### *Implementation of Guidelines*

Since the 2003 National Competition Policy assessment, the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (ANZECC & ARMCANZ, 2000a) have been revised, and the guidelines on biosolids management and sewerage systems overflow have been completed.

Tasmania has indicated that it expects that the *State Policy on Water Quality Management 1997* will undergo a full review in 2006, and be amended to align protected environmental values with those in the revised *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*.

#### *Water Quality Objectives*

According to Tasmania, water quality objectives, as defined in its State Policy on Water Quality Management 1997, broadly equate to long term targets in the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000*. In un-impacted catchments, the water quality objectives will reflect existing ambient conditions; in highly stressed catchments they will represent long-term targets.

Tasmania has developed a process for setting water quality objectives. It has been tested in one west coast catchment. Tasmania expects that, except where required on a case-by-case basis, water quality objectives will be set for catchments through the natural resource management framework established in Tasmania in a manner and timeframe that is consistent with the requirements of the National Resources Management National Monitoring and Evaluation framework and the State Policy on Water Quality Management 1997.

#### *State Water Quality Monitoring Strategy*

*The Tasmanian Surface Water Quality Monitoring Strategy* (DPIWE, 2003b), adopted in 2003, underpins the Tasmanian Government's role in coordinating water quality monitoring and reporting activities across the state. A key objective of the strategy is to develop and maintain partnerships with local government, industry and community groups by developing and maintaining a centralised Tasmanian water quality database.

Tasmania reported that the Department of Primary Industries, Water and Environment has made recent progress towards this objective by:

- assisting the development of a centralised database for community monitoring programs such as Waterwatch
- partnering with relevant councils to audit their water quality monitoring activities and associated data to identify opportunities for integrated water quality monitoring and data sharing. Currently arrangements are in place with four councils—Break O'Day, Meander Valley, Central Highlands and Latrobe—to integrate water quality information and water monitoring activities
- progressing the establishment of memorandums of understanding with key industry stakeholders regarding sharing water information and reporting of this information
- increasing the baseline water quality monitoring network to 54 stations. At each site nutrients and other water quality parameters are monitored monthly. Pesticides are monitored quarterly at all 54 sites. In addition turbidity, dissolved oxygen, electrical conductivity (as a measure of salinity) and temperature are monitored continuously at a number of stream gauging stations where water quality has been identified as a potential issue.
- training community groups in water quality monitoring, and
- improving access to water related data for all stakeholders. Tasmania believes that the new Water Information System of Tasmania (WIST) website ([www.water.dpiwe.tas.gov.au/wist/ui](http://www.water.dpiwe.tas.gov.au/wist/ui)) will significantly improve the standard of access to the Department of Primary Industries, Water and Environment's water related data for other organisations and the general public. The site

**will display water flow records; water quality data; water licence and farm dam information; conservation of freshwater ecosystem values data; macro-invertebrates and fish sampling records; water resources published documents; and annual waterway monitoring reports.**

## Discussion and Assessment

**Tasmania has demonstrated continued and active implementation of the NWQMS through its State Policy on Water Quality Management 1997. Protected environmental values now exist for the majority of Tasmania's fresh and estuarine waters. Tasmania intends to initiate a public consultation process to set protected environmental values for coastal waters and to establish interim protected environmental values.**

**In line with the key elements of the NWQMS, the existing protected environmental values were developed in consultation with the community; and are presented on the Department of Primary Industries, Water and Environment website according to the scale at which they have been determined through public consultation processes.**

**The Commission considers that the NWQMS has been recognised in Tasmania's water planning processes. Protected environmental values inform the development of environmental water requirements within water sharing plans.**

**At the time of the 2003 National Competition Policy assessment, Tasmania had determined interim water quality objectives for several Tasmanian catchments as part of a pilot scheme. However, the Commission notes that Tasmania has yet to fully integrate water quality objectives into the planning framework.**

**The 2003 National Competition Policy assessment noted that the Tasmanian Government had recently approved the state Water Quality Monitoring Strategy. The Commission is satisfied that the Tasmanian Government is now implementing the strategy across the state.**

**On the basis of the above discussion, the Commission considers that Tasmania has made satisfactory progress towards meeting its COAG commitment in this area.**

# AUSTRALIAN CAPITAL TERRITORY



# AUSTRALIAN CAPITAL TERRITORY

## 8.1 Implementation

### Assessment Issues

The Commission is looking for the Australian Capital Territory, as a signatory to the National Water Initiative, to:

- have completed its National Water Initiative Implementation Plan
- where cross-jurisdictional water sharing agreements exist, have commenced a review of existing agreements to ensure their consistency with the National Water Initiative and identify those instances where any new agreements may be required, and
- for Murray-Darling Basin jurisdictions, have commenced a process to review the 1992 Murray-Darling Basin Agreement for consistency with the National Water Initiative.

The Australian Capital Territory provided the Commission with a draft implementation plan on 28 July 2005. This draft was assessed by the Commission and comments were given back to the Australian Capital Territory to indicate how the implementation plan could be improved for it to be considered for accreditation.

The Commission currently expects to receive a finalised implementation plan from the Australian Capital Territory in early 2006.

Apart from a long-standing agreement to supply water to Queanbeyan City Council, the Australian Capital Territory is a signatory to only one cross-jurisdictional water sharing arrangement: the 1992 Murray-Darling Basin Agreement (MDBC, 1992).

The review process for the Murray Darling Basin Agreement has not commenced. Signatories to this agreement include the Australian, New South Wales, Victorian, South Australian, Australian Capital Territory and Queensland governments.

In addition, the Australian Capital Territory is currently developing a memorandum of understanding with New South Wales to provide water resources under an identified and agreed settlement pattern for the areas surrounding Canberra. It will also guide management of the catchments. The development of this agreement was noted in the 2004 National Competition Policy assessment

(NCC, 2004b); however, the Australian Capital Territory has not demonstrated any progress towards finalising this agreement since that assessment.

More broadly, the Australian Capital Territory has noted that recent natural events have hampered some aspects of water resource management in the territory.

A prolonged drought brought the introduction of the Temporary Water Restrictions Scheme, with Stage 1 commencing in December 2002. Over the next three years, stages 2 and 3 of the scheme were applied as appropriate to the season, drought conditions and the level of the territory's water storages.

Extensive bushfires in the Australian Capital Territory and surrounding regions in January 2003 resulted in the loss of water infrastructure, as well as the loss of vegetation in the Cotter River catchment. This catchment provided about 80 per cent of the territory's annual water supply, and an estimated 90 per cent of it was burned.

Subsequent heavy rainfall led to severe soil erosion problems in the Cotter River catchment, due to loss of stabilising vegetation. Also, the usually high water quality of this system deteriorated as a result of contamination from remnant fire debris.

The existing Stromlo Water Treatment Plant did not have the capacity to treat the contaminated water. To enable treatment of contaminated water from the Cotter system, and thereby reduce the demands on other water supplies in the Googong Dam, significant upgrades were made to the Stromlo Water Treatment Plant. This work was completed in December 2004.

The Googong Dam was used as a main source of water for the territory from 2003 (just after the bushfires) until the end of 2004; it was the sole water supply for an extended period during that time. While the Cotter system is the preferred water supply, Googong Dam is nevertheless an intrinsic component of the Australian Capital Territory's water supply system. The Googong Dam Treatment Plant was upgraded after the upgrade of the Stromlo Water Treatment Plant was completed.

**Rehabilitation of the Cotter River catchment has begun but it will take many years to complete. Rehabilitation requirements include road and drainage works, sediment basins, wetlands, site preparation, vegetation planting, monitoring, and scientific studies. Adaptive management practices are being implemented to respond to the regeneration of the catchment over time.**

### Discussion and Assessment

**The timetable for the Australian Capital Territory completing an implementation plan and having it assessed and accredited by the Commission has been revised. The Australian Capital Territory was originally asked to provide a final implementation plan, incorporating the Commission's comments, by September 2005. Commission is expected to consider plans for accreditation early in 2006.**

**The Commission notes that the Australian Capital Territory is participating in national processes under the National Water Initiative (COAG, 2004a) to carry out water reform activities—both within the territory and across jurisdictions, with agreed timeframes—to improve water resource management.**

**The Commission considers that the Australian Capital Territory has made progress in this area. The Commission expects the territory's implementation plan to be finalised in the near future.**

## 8.2 Water Access Entitlements and Planning Framework

### 8.2.1 Water Access Entitlements

#### Assessment Issues

The Commission is seeking detailed information from the Australian Capital Territory with regard to its current arrangements for the provision of water access entitlements. The Commission will be looking for the Australian Capital Territory to:

- have completed the conversion of water access entitlements to entitlement systems in line with the principles and timeframes of its 1994 Water Reform Framework commitment

- demonstrate the commencement of incorporation of the National Water Initiative water access entitlement requirements into its legislative and administrative regimes
- have made significant progress in the development of compatible, publicly accessible systems for registering water access entitlements and trades, including recognition of third-party interests (such as the interests of financial institutions), and advise on the current status of its entitlement register with regard to the registration of third-party interests and an indication of its plans to implement a more robust register by 2006, to meet its Council of Australian Governments (COAG) obligation
- have made significant progress toward finalising the MDBC Cap for the territory to complete the determination of the territory's consumptive pool, and
- report on the public consultation and education processes in place for the introduction or review of entitlement regimes.

**The *Water Resources Act 1998* is the legal basis for allocating water, issuing licences to take water, and determining environmental flow requirements within the Australian Capital Territory.**

**Under this Act, the Australian Capital Territory's water resources strategy *Think water, act water* was released in April 2004 and is now being implemented (ACT Government, 2004). *Think water, act water* is a statutory document. It is also referred to as the Water Resources Management Plan. This plan is discussed further in Section 8.2.3 on Water Planning and Addressing Currently Overallocated and/ or Overused Systems.**

#### Water Entitlements

**Water access entitlements within the Australian Capital Territory are issued as water licences and water allocations under the *Water Resources Act 1998*. These relate to the taking of surface water from a watercourse, lake or spring, and groundwater.**

**Water licences are issued to allow the taking of water within a water allocation under location and purpose conditions.**

**Extraction of water for any purpose requires a water licence, except for stock and domestic purposes and in emergencies.**



Individual users and water utilities require a water licence and an associated water allocation to take water.

Water entitlements within the Australian Capital Territory are:

- separated from land title
- issued in perpetuity
- able to be traded permanently or temporarily
- managed through water resources management plans, and
- recorded on a public register.

All water licences have been issued in perpetuity since 1998. Prior to this, only groundwater use required a water licence. These licences were not perpetual and were not tradable.

Water allocations are linked to a water licence and specify a volume of water that may be taken under that water licence, in line with any additional conditions of the licence. The Australian Capital Territory is yet to define its water resources as a consumptive pool due to the delay in finalising its Murray-Darling Basin Ministerial Council Cap, as discussed below.

Although water licences are issued in perpetuity, water allocations are issued for a period of ten years under the strategy *Think water, act water*.

Water is predominantly used for urban purposes in the Australian Capital Territory. The Australian Capital Territory Electricity and Water Corporation (ACTEW) is the main allocation holder, with the responsibility of supplying all urban areas within the territory.

For the 2004 National Competition Policy assessment, the Australian Capital Territory was found to have established a system of water entitlements that is separated from land title and specified in volumetric terms, as is consistent with its commitments in the 1994 COAG water reform agreement. Entitlements are issued in perpetuity, in accordance with the National Water Initiative.

#### Conversion of Water Access Entitlements

As mentioned above, the Australian Capital Territory had developed an entitlements system in line with COAG and National Water Initiative water reforms under the *Water Resources Act 1998*. Through this legislation, the process of converting all water access entitlements within the territory to the new system of water licences and allocations began in 1998.

In August 2005, the Legislative Assembly passed amendments to the *Water Resources Act 1998* to place a moratorium on the granting of new water licences and allocations. The Australian Capital Territory has stated that this is for the purpose of implementing the new licensing scheme and taking into account the proposed use of the resource. Existing licences will continue during the moratorium period.

The Australian Capital Territory has stated that the conversion of all entitlements within the territory is due to be completed by mid-2006.

#### Compatible Entitlement Register

At the time of the 2004 National Competition Policy assessment, the Australian Capital Territory's register of water entitlements was publicly available in printed form from Environment ACT. It did not record third-party interests. This remains the case at the time of this assessment. The Australian Capital Territory is of the view that the volume and value of water transactions within the territory are too small to warrant such consideration.

The Australian Capital Territory is committed to developing nationally compatible registers for water access entitlements through an inter-governmental working group under the Natural Resource Management Ministerial Council. See Section 8.3 on Water Markets and Trading for more detail.

#### Murray-Darling Basin Ministerial Council Cap

The Australian Capital Territory Government has agreed to participate in the Murray-Darling Basin Ministerial Council Cap. At this stage a Cap for the Australian Capital Territory has yet to be finalised. Analysis and modelling is still progressing on what is a suitable Cap for the territory.

The Australian Capital Territory advised in the 2004 National Competition Policy assessment that it intended to complete a Memorandum of Understanding with the Australian and New South Wales governments by 2005, including provision for the Cap. However, the Australian Capital Territory has indicated to other jurisdictions that it will not agree to a Cap based on historical use, such as that for New South Wales and Victoria. Instead, the Australian Capital Territory will seek agreement to a Cap that recognises Canberra's existing water rights, based on its own specific factors and needs, while providing an appropriate level of protection for the Murray-Darling River system.

The Australian Capital Territory will develop this Cap in collaboration with the Murray-Darling Basin Commission.

As the Cap has yet to be finalised, the Australian Capital Territory is unable to make a determination of the consumptive pool for the territory—a prerequisite to interstate trading and for specifying water access entitlements as a share of the resources—which it agreed to do by 2005.

#### Public Consultation and Education

*Think water, act water* was released as a draft strategy for public comment in November 2003. Additionally, two community meetings were held to discuss the strategy. Many educational programs are provided for in *Think water, act water*; but they are focused on water saving measures for urban areas and do not contain information on the water access entitlement system. It is assumed that this is because of the small number of entitlement holders in the Australian Capital Territory.

A Community Reference Group was formed for the development of the strategy. The group is assumed to include representatives for water entitlement holders within the territory, although this was not demonstrated by the Australian Capital Territory.

#### Discussion and Assessment

The Australian Capital Territory has shown progress in achieving a framework for water access entitlements—in line with the National Water Initiative—through the release of *Think water, act water* in April 2004 under the *Water Resources Act 1998*.

The Australian Capital Territory has not completed the process of converting water access entitlements. It appears to have made little progress since the last National Competition Policy assessment in 2004.

Furthermore, the Australian Capital Territory has not demonstrated any significant progress towards finalisation of a Murray-Darling Basin Ministerial Council Cap. Consequently the consumptive pool for the territory has not been determined, contrary to requirements for this assessment.

The Australian Capital Territory has indicated that the 2003 bushfires, and their consequences, and the recent prolonged drought have hampered progress on some aspects of water resource management.

The territory maintains a register of water licences and allocations. While this register does not include provisions for third-party interests, the Commission notes that this may not be necessary in a water market as small as that within the Australian Capital Territory. The Commission notes the Australian Capital Territory's involvement in the cross-jurisdictional working group for developing compatible registers for entitlements. To achieve consistency with other jurisdictions, the Australian Capital Territory will need to include third-party interests in its register.

While the Australian Capital Territory has done little in the way of consultation and education in relation to the introduction of the new system of water access entitlements or review of the entitlement regime, the Commission recognises that there are very few consumptive users, other than the major urban water utility, in the territory.

As a result of the small amount of action evident since the last National Competition Policy assessment—including entitlement conversion and action towards finalising a Murray-Darling Basin Ministerial Council Cap—the Commission considers that the Australian Capital Territory has made little progress in this area.

The Commission accepts that recent natural events have hampered progress in these areas. Nevertheless, the Commission will be looking for the Australian Capital Territory to make much more progress in the coming year, including the finalisation of a Cap.

## 8.2.2 Environmental and Other Public Benefit Outcomes

---

### Assessment Issues

The Commission is looking for the Australian Capital Territory Government to have commenced the process to incorporate the National Water Initiative architecture for the provision of water for environmental and other public benefit outcomes into its water entitlement, planning and management arrangements.

**For surface water and groundwater systems in the Australian Capital Territory, water for the environment is provided through environmental flows (as opposed to a specific volumetric allocation) and is given statutory recognition as a requirement under the *Water Resources Act 1998*.**

Water demand is low in most subcatchments, with the exception of those catchments that contribute to providing the urban water supplies.

A flow regime for environmental water is determined in accordance with *Think water, act water* and the methods set out in the *Environmental Flow Guidelines* under the *Water Resources Act 1998* (Environment ACT, 1999). The purpose of the guidelines is to ascertain the flow necessary to maintain aquatic ecosystems.

Water is required to be permanently set aside for the environment for beneficial long-term outcomes. In determining environmental flows, social and economic considerations are not taken into account. Even so, the environmental, economic and social impacts of implementing the *Environmental Flow Guidelines* must be considered.

A level of security is provided for environmental flows because the determined environmental need is considered when allocating water for consumptive use. Accordingly, the Australian Capital Territory has stated that it does not currently trade environmental water.

In the implementation of the *Environmental Flow Guidelines*, written notice must be published and a submissions period for public comment made available.

### Discussion and Assessment

**The water resources strategy *Think water, act water* provides a foundation for the territory to incorporate National Water Initiative requirements for the provision of water for environmental and other public benefit outcomes into the Australian Capital Territory's water entitlement, planning and management arrangements.**

**The Australian Capital Territory defines water for environmental and other public benefit outcomes through a flow regime, not as specific entitlements. As such, the territory does not allow for environmental water to be made available for trade. Given the level of water use and the amount of available water in the territory, the Commission considers that this is currently a suitable arrangement. The Commission notes that as demand for water increases (through growth in use by the territory or as a result of interstate trade), settling entitlement arrangements for environmental water will become necessary.**

The Commission considers that the Australian Capital Territory has met its COAG commitments in this area.

## 8.2.3 Water Planning and Addressing Currently Overallocated and/or Overused Systems

---

### Assessment Issues

In considering governments' arrangements for allocating water to the environment, in light of guidance provided by the 1994 COAG Water Reform Framework, the ARMCANZ/ ANZECC National Principles and the National Water Initiative, the Commission will expect the Australian Capital Territory to establish arrangements that:

- are based on the best available science and use strategic and applied research (principles 2 and 11)
- achieve a balance between environmental needs and human use that provides the water needed to achieve the environmental outcomes, while recognising, in systems where there are existing users, the existing rights of those users (principles 1, 4, 5, 6 and 9)
- involve monitoring and adaptive management where the regular assessment of ecosystem health guides water management processes (principle 8), and

- involve stakeholder consultation and transparent processes that are robust, and ensure the timely provision of relevant information to all interested parties (principles 7 and 12).

The Commission is also seeking detailed information from the Australian Capital Territory with regard to its current water planning arrangements, including the provision of water to the environment. In particular, the Commission will be carefully scrutinising the Australian Capital Territory's progress in meeting its commitments regarding the overallocated and/or stressed river and groundwater systems.

The Commission will be looking for the Australian Capital Territory Government to:

- demonstrate how its water management plans (and related arrangements) address the obligations in the 1994 Water Reform Framework and take account of the ARMCANZ/ ANZECC national principles regarding the provisions of water to the environment
- if the water allocated for environmental purposes for particular river and groundwater sources is significantly different from that recommended by the best available science, demonstrate that this decision is based on a robust examination of the socio-economic evidence and taken in the context of an open and transparent community consultation process that makes explicit the tradeoffs
- demonstrate that an integrated catchment management approach has been adopted for the management of water and that planning processes and administrative arrangements reflect an integrated approach to natural resource management
- demonstrate water allocations in all the river systems and groundwater basins identified in its 1999 implementation programmes are substantially complete
- provide an overview of the public consultation and education processes in place and adopted for water planning and for addressing overallocated and/or stressed resources, and
- report on progress with the determination of overallocated and/or overused systems not covered by its 1999 implementation programme and the pathways being developed to address them.

### Water Planning

The *Water Resources Act 1998* is the legal basis for allocating water, issuing licences to take water, and determining environmental flow requirements in the Australian Capital Territory.

Under this Act, the Australian Capital Territory's water resources strategy *Think water, act water* was released in April 2004 and is now being implemented. This statutory document is also referred to as the Water Resources Management Plan.

*Think water, act water* provides both short-term and long-term sustainable water resource management objectives. The document provides management direction until 2050. It will be reviewed annually to improve its effectiveness. The six key objectives of the *Think water, act water* are to:

- increase the efficiency of water use
- provide a long-term, reliable source of water for the Australian Capital Territory and region
- promote development and implementation of an integrated regional approach to Australian Capital Territory and New South Wales cross-border water supply and management
- protect the water quality in Australian Capital Territory rivers, lakes and aquifers, to maintain and enhance environmental, amenity, recreational and designated use values, and to protect the health of people in the Australian Capital Territory and down river
- facilitate the incorporation of water sensitive urban design principles into urban, commercial and industrial development, and
- promote and provide for community involvement and partnership in the management of the Australian Capital Territory water resources strategy *Think water, act water*.

In general *Think water, act water* is a comprehensive policy with its own implementation plan. It covers sustainable water resource management in the Australian Capital Territory and it provides key targets on water saving and water re-use. As part of demand management, *Think water, act water* also includes the delivery of water incentive programs that aim to improve water efficiency across sectors, especially the residential sector. Progress is already

being made in pursuing the water saving targets and other aspects of the strategy. The strategy is subject to ongoing review.

As indicated in previous National Competition Policy assessments, the Australian Capital Territory Government committed ACTEW to study the feasibility of territory's future water supply options. This was partly a result of the prolonged drought. The first report was released in December 2004 and assessed the need to increase the Australian Capital Territory's water storage. The study specifically considered population growth, climate change and climate variation, and the impact and acceptance of the temporary water restrictions scheme that was introduced in December 2002. This report took into particular account the measures to increase water savings arising out of *Think water, act water*.

The second ACTEW report was released in April 2005. It investigated options for possible future water storage, arriving at a recommended strategy to increase the Australian Capital Territory's water supply. The report included an assessment of the hydrological, environmental, economic and social factors of a number of infrastructure proposals. One option—obtaining water from Tantangara Dam—involves procuring water from New South Wales.

These reports have been independently assessed by Hunter Water Australia. The Australian Capital Territory expected to make an announcement on the territory's future water supply options in December 2005.

#### Integrated Catchment Management

As noted in the 2003 National Competition Policy assessment (NCC, 2003a), Environment ACT released an Integrated Catchment Management Framework for the Australian Capital Territory in 2000, and an implementation plan for 2001–2003. This provided administrative arrangements and decision-making processes that would ensure an integrated approach to natural resource management.

Since then, the Australian Capital Territory Natural Resource Management Board has been responsible for developing a regional plan for the territory to address significant natural resource management issues in the region—under the National Action Plan for Salinity and Water Quality and the Natural Heritage Trust programmes. This plan was

accredited in May 2004 and has a ten-year life. It aims to provide a strategic framework for natural resource investment at the territory and local scale. It also deals with natural resource management within policy and planning frameworks that are distinct from other jurisdictions.

#### Water Resource Management Arrangements

*Think water, act water* provides a management plan that covers all subcatchments of the Australian Capital Territory.

The water planning through *Think water, act water* provides for ecological and resource security outcomes. The Australian Capital Territory considers that the *Think water, act water* planning framework is in line with the guidelines for water management planning listed in the provisions and in Schedule E of the National Water Initiative. *Think water, act water* will be reviewed every five years.

There are 32 separate management units, or subcatchments, for the Australian Capital Territory. These subcatchments include those wholly within the territory, water supply catchments upstream of Googong Dam, and those that flow into or through the territory. *Think water, act water* provides details on the boundaries of these subcatchments as well as the volumes of water they affect, and how those volumes are apportioned between the environment and abstractive consumption.

The Australian Capital Territory considers that it has no overallocated or overused water resources within the territory. All 32 subcatchments within the Australian Capital Territory have an identified resource, with specific volumes set aside for the environment under the provisions of *Think water, act water*.

The Australian Capital Territory draws its urban water supply from two separate catchment systems. These are the Cotter River catchment, located wholly within the Australian Capital Territory, and the Googong system, which is part of the Queanbeyan River in New South Wales.

Most of the water required to meet current demand is drawn from the Cotter system, with water from Googong being drawn to meet peaks in demand in summer or during extensive dry periods. Urban water supplies are drawn from the Cotter River, the Queanbeyan River, and their tributaries.

Unless provided for under the planning framework of *Think water, act water*, no new allocations for water can be made for consumptive use.

*Think water, act water* allows the Australian Capital Territory to encourage better use of stormwater and recycled water. The territory will spend \$5 million over five years to help meet this outcome of the National Water Initiative. As part of the COAG water reforms, the Australian Capital Territory has agreed to A National Framework for Improved Wastewater Reuse and Stormwater Management in Australia. This strategy considers the issues surrounding property rights of the potential resources and the impact on other users of increasing the use of stormwater and recycled water.

The Australian Capital Territory is exploring innovative developments that incorporate rainwater tanks, infrastructure for recycling treated sewage and greywater, and use of stormwater. These projects are aimed at reducing the demand on the territory's water supply system.

#### Provisions for the Environment

The Environment Protection Authority is responsible for managing environmental flows in accordance with *Think water, act water* under the *Water Resources Act 1998*.

The Australian Capital Territory considers that environmental flows are managed adaptively, particularly in times of drought. Low flow monitoring programs provide an indication of the ongoing response of aquatic 'health' in times of low flow. These results lead to changes in the flow management regime, including variations in releases, to enable an adaptive and sustainable balance between environmental needs and human uses.

The current level of environmental flows in the Australian Capital Territory was determined in 1999. There are four elements that are considered in designating environmental flows for Australian Capital Territory waterbodies. These are low flows, flushing flows, special purpose flows, and impoundment flows.

The environmental flows required in the territory's subcatchments are determined by the Environment Protection Authority in accordance with the *Environmental Flow Guidelines*. These guidelines allow for seasonal changes and spawning flows, as well as for water capture and storage. Streamflow is maintained by prohibiting

extractions during low flow periods, but allowing extraction in other parts of the flow regime. It is further maintained by releases from storage systems.

The Australian Capital Territory has stated that up to about 41 gigalitres, or 23 per cent of total flow, is passed through the territory's water supply dams as environmental flows.

The *Environmental Flow Guidelines* are currently undergoing review, guided by advice from the eWater Cooperative Research Centre for Freshwater Ecology (Ogden et al, 2004). This process will update the guidelines with the latest scientific understanding and the most up-to-date streamflow data. The Australian Capital Territory has stated that, following community consultation, a new Environmental Flows Regime is expected to be issued in late 2005.

In general, the *Environmental Flow Guidelines* set the following rules for environmental flows, as noted in the 2004 National Competition Policy assessment:

- in the key urban water supply subcatchments—the Googong, Tinderry and Burra River subcatchments—around nine per cent of flow is allocated to the environment
- in the other urban water supply subcatchments—the Corin, Bendora and Lower Cotter River subcatchments—between 25 per cent to 28 per cent of flow is allocated to the environment, and
- in the remaining subcatchments that do not contribute to urban water supplies, an average of 92 per cent of flow is allocated to the environment.

Environmental flows in the Murrumbidgee River consist of whatever flows New South Wales allow to enter the Australian Capital Territory, plus the environmental flows from all tributaries that join the river within the territory.

#### Entitlements

The average annual runoff from Australian Capital Territory controlled catchments is 494 gigalitres. Of this, 272 gigalitres is designated by the *Environmental Flow Guidelines* as environmental flow, leaving 222 gigalitres available for consumptive use. On average 65 gigalitres is used, with an average of 35 gigalitres returned to the Molonglo River as treated effluent. The remaining 160

gigalitres flows out of the Australian Capital Territory and into Burrinjuck Dam for use downstream.

ACTEW holds a water entitlement for 65 gigalitres for urban use. Up to seven gigalitres is used for non-urban purposes in the Australian Capital Territory.

In addition to the entitlement allocations discussed previously, up to a limit of ten per cent of groundwater recharge in a subcatchment can be extracted unless research determines that a higher level of groundwater use is sustainable. Due to limited resources, yield is generally less than one litre per second.

The Australian Capital Territory considers that it takes a conservative and precautionary approach to groundwater extraction that enables environmental values to be sustained, and that is supported by hydro-geological and ecological advice.

For surface water, the environmental allocation is determined before any consideration of extractive allocations. It is provided to protect the environmental component that is considered critical for maintaining environmental values.

#### Public Consultation and Education

Public consultation was undertaken before *Think water, act water* was finalised. The draft strategy was released for public comment at the end of 2003 and two community meetings to discuss the draft strategy were held during the submissions period.

Community issues were addressed in the development of the strategy through the formation of a Community Reference Group, involving representatives from various stakeholder groups, and through other focus groups. Presentations were made at community, business and industry group meetings.

Activities aimed at educating the community were carried out, including a community summit on water, displays at public events and the *Think water, act water* website.

#### Discussion and Assessment

As noted in the 2004 National Competition Policy assessment, the Australian Capital Territory has a water resource management plan in place that provides water for the environment. This meets the 1994 COAG Water Reform Framework. Water management strategies under *Think*

*water, act water* are broadly consistent with the National Water Initiative.

The Commission considers that the Australian Capital Territory's water management plan is in line with the ARMCANZ/ANZECC National Principles for Providing Water for the Environment. The Commission considers that using the expertise of the eWater Cooperative Research Centre will help to ensure that the best available science underpins the updated 2006 *Environmental Flow Guidelines*.

There are no areas identified as overallocated or stressed in the Australian Capital Territory. The Commission considers that the territory provides the water required to achieve the environmental outcomes of the region, while recognising the rights of existing consumptive users (most consumptive water use in the territory is for urban water supplies). Furthermore, *Think water, act water* involves an adaptive management approach to addressing water resource management that involves public consultation and it is transparent.

The Commission considers that the Australian Capital Territory has met its COAG commitments in this area.

### 8.2.4 Assigning Risks for Changes in Allocation

#### Assessment Issues

The Commission expects the Australian Capital Territory to demonstrate that it has a process and timetable in place to integrate the risk assignment framework into their legislative and administrative water entitlement and planning regimes, and to have applied the framework for any changes in allocations that have not been provided for in its current water plan overallocation pathways.

It is the Australian Capital Territory Government's view that, given that the territory is a net exporter of water, it will not have to undertake future reductions in the availability of water for consumptive use. Therefore it has not developed a mechanism to assign any risks for changes in allocation.

However, the Australian Capital Territory has stated that a range of planning scenarios are being developed on the basis of information on climate change, bushfire impacts and population growth. These variables will be taken into account when managing future water resources.

The majority of water used within the Australian Capital Territory is allocated to the major water utility for urban purposes.

#### Climate Change

Long-term climate change projections for the Australian Capital Territory indicate that:

- mean annual temperatures could increase by 0.4–1.5°C by 2030
- average annual rainfall could change considerably, ranging from an increase of two per cent to a decrease of nine per cent by 2030, and
- annual evaporation could increase by 1.4 per cent to 9.1 per cent.

Increases in temperature are likely to result in increased evaporation, causing the amount of runoff to be lower than expected, even during wet years. Under these projections, a ten per cent reduction in rainfall, and changing rainfall patterns, could result in a reduction of runoff of up to 20 per cent into the territory's water supply storages. Future climate change predictions are taken into account in water resource planning for the Australian Capital Territory.

#### Bushfire

In January 2003, major bushfires swept through parts of the Australian Capital Territory. These fires damaged vast areas of the territory's catchments, causing long-term damage to natural and developed water systems.

Preliminary investigations suggest that there has been little change in runoff patterns in the catchments. Nevertheless, water runoff is expected to decrease over the next decade as vegetation regrowth continues. Additionally, water quality in the Cotter River reservoirs has been affected, and this is likely to continue until adequate groundcover and vegetation have been restored to the catchment area. Water quality is dealt with further in Section 8.9 on National Water Quality Management Strategy.

#### Population Growth

The population for Canberra, Queanbeyan and the adjacent region is likely to be 460 000 by 2050 (based on median level population projections). The uppermost population projections indicate a Canberra and Queanbeyan population of 500 000 by 2032.

Human population is a significant factor in determining the water requirements of a region, but there is always some uncertainty about such projections. This is even more important in the Australian Capital Territory, where the majority of water consumption is for urban supplies.

It is estimated that in conjunction with the targets for reducing mains water use, it is possible for the Australian Capital Territory to meet the water requirements for median level population projections without having to construct further water supply infrastructure.

### Discussion and Assessment

While noting that the Australian Capital Territory is investigating specific risks to its water resources, the Commission considers that the territory has not yet provided adequate justification for not exploring a risk assignment framework for its water resource entitlements.

The Commission considers that the Australian Capital Territory should further consider its policy in this area. The yet to be defined Murray-Darling Basin Ministerial Council Cap, the subsequent consumptive pool for the Australian Capital Territory, and the risk of changes to the consumptive pool in the future are all likely to have some effect.

The Commission will expect the Australian Capital Territory to give further consideration to these issues and to better demonstrate its policy position in order to meet its COAG commitments under the National Water Initiative with regard to assigning risks for changes in allocations.

The Commission considers that the Australian Capital Territory has not met its COAG commitments in this area.

### 8.2.5 Indigenous Access

#### Assessment Issues

The Commission is looking for the Australian Capital Territory to show that it has in place arrangements for the incorporation of Indigenous water issues into water planning processes, including the recognition of the possible existence of native title rights to water.

During the consultation process for the development of *Think water, act water*, Indigenous groups were approached to identify their needs, and how they can be incorporated into the strategy. There were no Indigenous access or entitlement requirements identified during this process.



The previous planning undertaken by the Australian Capital Territory did not identify any cases of Indigenous access to water resources, Indigenous entitlements or Indigenous access or entitlement issues. Even so, future water planning is expected to continue to include consultation with Indigenous groups; their needs will be accommodated into relevant plans.

Under the *Water Resources Act 1998*, there is no requirement to recognise the possible existence of native title rights to water. Furthermore, there are no arrangements within *Think water, act water* for the recognition of native title rights to water.

## Discussion and Assessment

Indigenous groups were consulted during the development of the water management strategy. This consultation will continue in future water resource planning.

The Commission notes that although there are provisions for addressing Indigenous water issues within *Think Water Act Water*, there is no statutory requirement for these issues to be included in the management of water resources within the Australian Capital Territory nor recognition of the possible existence of native title rights to water within the territory's water planning processes.

Overall, the Commission considers that the territory has made satisfactory progress towards meeting its COAG commitments in relation to Indigenous access. Nonetheless, the Commission considers that the Australian Capital Territory should continue to improve its processes to address the possible existence of native title rights to water.

### 8.2.6 Interception

#### Assessment Issues

The Commission will look for the Australian Capital Territory to provide information on the steps being taken to implement water interception measures detailed in the National Water Initiative, including any application of the National Water Initiative provisions to recent activities.

Under the *Water Resources Act 1998*, all farm dams, bores and storages of overland flows within the Australian Capital Territory require a permit as a water control structure. If water is to be extracted from the farm dam or storage, a

licence is required. Prescribed water control structures and offstream storages with a capacity of less than two megalitres do not require a licence. Entitlements are not required for stock and domestic use and fire control purposes.

The Australian Capital Territory Government acknowledges that urban expansion is currently the largest landuse change within the territory. In contrast to rural areas, where a reduction in runoff is the problem to be managed, urban areas promote an increase in runoff. This requires management of a different kind.

The Australian Capital Territory is of the view that interception, from forestry or from any other activity, is not an issue within the territory. This is due to forested areas becoming urbanised.

The Australian Capital Territory considers that it is committed to identifying interception of surface and groundwater by landuse change activities that would have an effect on water access entitlements. The Australian Capital Territory Government also considers that it encourages use of the additional volume of water from runoff in newly urbanised areas, thereby reducing potential negative outcomes. In addition, the water abstraction charge, which applies to other abstraction in the Australian Capital Territory, does not apply to urban runoff. The aim is to encourage reuse of urban stormwater. The Australian Capital Territory completed the Non-Urban Study Report in November 2003 (Non-Urban Study Steering Committee, 2003) and is in the process of developing water sensitive urban design guidelines.

## Discussion and Assessment

Given the small area of the Australian Capital Territory and the level of urban development, interception changes resulting from landuse change are unlikely to impact significantly on the few existing entitlements. Urbanisation is likely to reduce infiltration, increase the amount of runoff, and so increase flows into waterways.

New pressures for the security of water supplies may arise to the extent that there are other land use changes following the bushfires, and that any significant increase in groundwater extraction levels occurs.

Overall, the Commission considers that for the purpose of this assessment, the Australian Capital Territory has met its COAG commitments in this area.

### 8.3 Water Markets and Trading

#### Assessment Issues

Trading arrangements in water entitlements are to be instituted to maximise water's contribution to national income and welfare, where systems are physically connected or hydrologic connection and water supply considerations permit trading. Under the 1994 Water Reform Framework, trading arrangements were to be finalised by 2005. The National Water Initiative expands and re-defines the 1994 water reform commitments.

Consistent with its National Water Initiative commitments, the Commission expects the Australian Capital Territory to:

- have removed remaining institutional barriers to permanent and temporary trade
- demonstrate trading rules in existing water management plans facilitate trading consistent with the actions and outcomes of the National Water Initiative, or, if inconsistent, a process for review is in place
- demonstrate a process is in place to incorporate trading rules consistent with the National Water Initiative into new water plans, and
- have pathways in place by the end of 2004, leading to the full implementation by the end of 2006, of compatible, publicly-accessible and reliable water registers of all water access entitlements and trades.

The Australian Capital Territory's *Water Resources Act 1998* provides for the permanent or temporary transfer of all or part of a water entitlement, subject to approval of the Environment Protection Authority. The Australian Capital Territory has advised that there were no developments in arrangements for intra-territory trade and that no trading activity occurred during 2004–05.

The *Water Resources Act 1998* provides for trade between the Australian Capital Territory and other jurisdictions. Interstate trade will be possible only after the Murray–Darling Basin Ministerial Council Cap on water diversions for the Australian Capital Territory is finalised. Agreement

with other jurisdictions on the terms and conditions of trade will also need to be negotiated before interstate trading is possible.

The Australian Capital Territory is committed to a Cap but has not yet finalised its Cap proposal. Analysis and modelling is still underway for what is a suitable Cap for the Australian Capital Territory. Australian Capital Territory progress on a Cap has been stalled in recent years as a result of the impact of the prolonged drought and the 2003 bushfires and their impacts. As such, the Australian Capital Territory is yet to finalise its consumptive pool (based on its future growth and special national capital factors) and to specify entitlements as a share of this pool. Until this occurs, interstate trade with the Australian Capital Territory cannot occur. The current timetable for finalisation of the Cap is mid-2006.

Under current arrangements, the Environment Protection Authority cannot approve the trade of an allocation unless:

- the allocation (including an interstate allocation) under a licence is transferred to the transferee, or
- the authority is satisfied that the water taken under the licence will be used by the buyer for the same purpose as the seller, and at the same place.

In approving a transfer, the Environment Protection Authority also needs to take account of the applicant's environmental record both in the territory and elsewhere.

The Australian Capital Territory considers that there is insufficient demand at this point in time to justify the establishment of intra-territory trading rules beyond the approval requirements of the Environment Protection Authority.

The Australian Capital Territory water entitlement register is publicly available. The territory does not currently provide for the registration of third-party interests, and there is no intention to change this situation because the volume of entitlements in the territory is too small to warrant such an investment. The Australian Capital Territory is engaged in a national process to determine common characteristics that will be applied to registry systems to achieve national compatibility.

## Discussion and Assessment

The Australian Capital Territory has established effective legislative arrangements for temporary and permanent intra-territory and interstate water trading, commensurate with the small number of tradable entitlements in the territory. However, the ongoing delay in the finalisation of the Murray-Darling Basin Ministerial Council Cap on water diversions for the Australian Capital Territory, and the lack of development of the necessary arrangements with other states to facilitate trade, is preventing the opening up of the interstate trading market in the Australian Capital Territory.

The Commission notes that the Australian Capital Territory has not developed specific trading rules to manage the potential impacts of trade on the environment, other than an assessment of a transfer applicant's past history with regard to environmental management. While the Commission accepts the Australian Capital Territory's current position that the development of detailed rules are not required at present (due to the very limited demand for water trading), the Australian Capital Territory will need to consider developing more specific arrangements in the event that the impetus for interstate trade does increase.

The Australian Capital Territory has a public entitlement register that defines entitlements. The Commission notes that third-party interests are not currently registered and that the Australian Capital Territory considers there are too few entitlements to justify introducing such a provision. The Commission also notes that the Australian Capital Territory is engaged in a national process to develop compatible registry arrangements. The Commission nevertheless holds the view that the Australian Capital Territory needs to develop arrangements to allow for the registration and protection of third-party interests in these entitlements, particularly to support the opening up of interstate trade.

The Commission considers the Australian Capital Territory has made some progress in meeting its COAG commitments. The Commission looks for the Australian Capital Territory to continue its work to finalise its Murray-Darling Basin Ministerial Council Cap and develop the necessary administrative arrangements with other states to allow for the opening up of an interstate market.

## 8.4 Best Practice Water Pricing and Institutional Arrangements

### 8.4.1 Water Storage and Delivery Pricing

#### 8.4.1a Metropolitan

##### Assessment Issues

##### *Full cost recovery*

The Australian Capital Territory is required to demonstrate that there has been substantial movement towards upper bound pricing for all metropolitan water and wastewater businesses.

##### *Dividends*

The Australian Capital Territory is required to demonstrate that dividend policies for metropolitan water and wastewater businesses comply with Council of Australian Governments obligations.

##### *Trade waste policies*

The Australian Capital Territory is required to demonstrate that it has a systematic approach to trade waste charges that does not lead to non-transparent cross-subsidies, and that the results of ACTEW's assessment have informed the Independent Competition and Regulatory Commission's review of charges to apply from July 2004 to June 2009.

**Water and wastewater services in the Australian Capital Territory are provided by ACTEW, a territory owned corporation. ACTEW retails and distributes water, including: billing; sales; planning; design and maintenance of the network (which reticulates water from water treatment plants to customers); and the collection and treatment of bulk water supplies.**

**Wastewater services include the management of: billing; sales; planning; design and maintenance of the network which reticulates sewage from customer installations to sewage treatment plants; and treatment of sewage and grease and oil disposals to the required environmental standards. These activities are conducted through the Utilities Management Agreement.**

### Cost Recovery

The Australian Capital Territory has implemented through its independent pricing authority—the Independent Competition and Regulatory Commission—substantial achievement of upper bound pricing for the sale of Australian Capital Territory water to all sectors of Canberra where the water utility provides the service. The Independent Competition and Regulatory Commission sets price paths that reflect an appropriate return on ACTEW's asset base, a recovery of ACTEW's operating costs and a return of its capital expenditure. The National Competition Council has in the past acknowledged that ACTEW was fully compliant with the full cost recovery commitments for urban water and wastewater.

### Community Service Obligations

Concessions are provided for certain groups, mainly pensioners, for water and sewerage charges and are administered by the Department of Disability, Housing and Community Services. At present ACTEW grants are worth approximately \$6 million in rebates each financial year, the full cost of which is reimbursed to ACTEW by the Australian Capital Territory Government. The rebates apply to water and wastewater charges but not to the water abstraction charge.

### Dividend Policies

As an incorporated body, ACTEW is bound by the *Corporations Act 2001*, which stipulates that it may pay dividends from profits only (including accumulated retained profits). The Australian Capital Territory Government's approach is to require ACTEW to pay a dividend equivalent to 100 per cent of after tax profits, subject to a consideration of factors such as the cash needs of the business and its requirements for capital restructure and capital expenditure. The Australian Capital Territory Government reviews these factors annually when negotiating ACTEW's statement of corporate intent, to determine whether the 100 per cent dividend policy should apply. As a result, ACTEW does not always pay a dividend equal to 100 per cent of after tax profits.

### Trade Waste Policies

Development of a systematic charging regime for trade waste in the Australian Capital Territory has not historically been a high priority given the large proportion of residential sewerage customers in Canberra and the relative absence of industrial dischargers. Most of the latter have been dealt with under a small number of negotiated trade waste agreements. With the support of the Independent Competition and Regulatory Commission's 2004 pricing decision, ACTEW is expecting to phase in reforms to wastewater and trade waste pricing from 1 July 2006. These reforms are expected to comprise a phased reduction of reliance on the number of flushing fixtures as a proxy for volumetric sewer discharge. In its place, there will be a volumetric-based charge. This phased-in reduction will begin with high discharge customers.

For 2004–05 charges, ACTEW only increased the supply charge, leaving the fixtures charge constant in nominal terms. This jointly addressed the water price impacts and part of the cross-subsidy issue between commercial and residential waste customers. The impact was that residential wastewater bills increased by 3.1 per cent in real terms, while non-residential customers with more than two fixtures saw their bills change by between -2.7 per cent and 0.2 per cent in real terms.

ACTEW is cautious about going too far in this direction, however, owing to the fact that supply charge increases also impact heavily on small non-residential customers (those with less than two fixtures). Defining how much this group should be paying should be an outcome of further work on trade waste. For 2005–06 trade waste charges, there was an approximately equal percentage increase in the supply and fixtures charges.

## Discussion and Assessment

### Cost Recovery

Prices for recovery of ACTEW water and wastewater services are set by the Independent Competition and Regulatory Commission. The Independent Competition and Regulatory Commission determines a price path that reflects an appropriate return on ACTEW's asset base, a recovery of ACTEW's operating costs, and a return on its capital expenditure.

In 2004, the Independent Competition and Regulatory Commission delivered the most recent price path for the recovery of water and wastewater operations of ACTEW. The Independent Competition and Regulatory Commission prescribed a water tariff structure, which has been adopted by ACTEW.

On the basis of the above information, the Commission considers that the Australian Capital Territory has met its COAG commitment with regard to full cost recovery of metropolitan water and wastewater operations.

### Dividend Policies

ACTEW is required to pay dividends to the Australian Capital Territory Government out of profits only (both current and retained). Dividend payments to the Australian Capital Territory Government are equivalent to 100 per cent of after tax profits, subject to an annual consideration of factors such as the business's cash needs and its requirements for capital restructure and capital expenditure.

On the basis of the above information, the Commission considers that the Australian Capital Territory has met its COAG commitment to demonstrate that dividend policies for metropolitan water and wastewater businesses comply with COAG commitments.

### Trade Waste Policies

The Commission notes that with the support of the Independent Competition and Regulatory Commission's 2004 pricing decision, ACTEW is expecting to phase in reforms to wastewater and trade waste pricing from 1 July 2006.

However, the Commission notes that a report by the Centre for International Economics found that there is the possibility that the non-residential sector is subsidising the

recovery of costs from the residential wastewater sector. To partly address this issue, ACTEW increased only the supply cost in 2004-05, leaving the fixture cost constant, in nominal terms. This increased the residential wastewater bills while the non-residential wastewater bills with more than two fixtures saw little change or a small decline in costs.

With the provision of the above information, the Commission considers that the Australian Capital Territory government has made some progress toward achieving its COAG commitment to demonstrate that it has a systematic approach to trade waste charges that do not lead to non-transparent cross-subsidies.

## 8.4.2 Cost Recovery for Planning and Management

### Assessment Issues

The Australian Capital Territory is required to demonstrate that resource management costs are being recovered, consistent with COAG pricing obligations, by showing:

- the extent to which resource management costs are being recovered
- that costs associated with activities undertaken for governments are being recovered
- that prices to recover resource management costs are being independently set or reviewed
- that resource management costs are transparently handled and publicly reported
- that adequate public consultation and education about water management charges has been undertaken, and
- the extent to which costs associated with the provision of licenses for water extraction are being recovered.

In particular, the Australian Capital Territory should:

- demonstrate that its fees are being set consistent with its Council of Australian Government pricing requirements and that water resource management costs are being recovered.

### Water Abstraction Charge

The price of water to consumers also includes a specific charge (the water abstraction charge) that is collected by ACTEW but is separate from its operating costs. The water abstraction charge, which is established under provisions of the *Water Resources Act 1998*, is designed to achieve two goals. It sends a signal to consumers regarding the true costs of water to encourage efficient water use (scarcity value component) and it recovers the cost of water provision not covered by the regulation of ACTEW. The latter is to ensure appropriate cost recovery of all other costs—mainly the environmental and catchment management and operational costs. Environmental costs include those costs that relate to providing environmental flows. These environmental management costs are separate from the costs borne by the utility; they are borne by the Australian Capital Territory Government instead. The charge does not apply to water re-use and stormwater used within urban areas.

In May 2003, at the request of the Australian Capital Territory Treasury, the Independent Competition and Regulatory Commission reviewed the method of setting and calculating the water abstraction charge. The Independent Competition and Regulatory Commission supported the objective and methodology of the water abstraction charge, but also stated that the water abstraction charge should be set according to the following criteria:

- transparency
- reliability
- flexibility, and
- legality (ICRC, 2003).

The Independent Competition and Regulatory Commission proposed a two-stage process for evaluating water supply, environmental and scarcity related costs for inclusion in the water abstraction charge calculation. First, costs must pass a reasonability test—that is the costs must be directly related to the provision of water and water related services in the Australian Capital Territory. Second, the cost must be easily measurable and be seen to not be arbitrary.

On the basis of that report, the water abstraction charge was increased by the Australian Capital Territory Government to \$0.20 per kilolitre from 1 January 2004, and to \$0.25 per

kilolitre from 1 July 2005. The water abstraction charge is identified as a separate item in Australian Capital Territory customer accounts.

In preparing its report, the Independent Competition and Regulatory Commission called for submissions and enquiries from the public. The community was consulted and an issues paper and a draft report were prepared, including responses to submissions.

The Australian Capital Territory's expenditure on environmental resource management, program delivery and other water related expenditure equates to the amount of funds collected by the water abstraction charge. Environmental costs increased in 2003–04 and onwards. This was a result of the impact of the 2003 bushfires on the territory's catchments, especially in the lower Cotter River.

The water abstraction charge thus represents a cost-recovery process for environmental externality costs associated with supplying water; it is incorporated into the overall price for water in the Australian Capital Territory. The concept of the water abstraction charge approaches an upper bound of cost recovery.

### Licences

The *Water Resources Act 1998* provides for a range of fees for the issue of allocations, permits and licences, application and annual administration fees and the water abstraction charge. This is administered by the Environment Protection Authority. There are no charges for water allocations where the allocation relates to the taking of water through a practice that existed prior to 1998 and the allocation does not permit trade of the allocation.

Fees (excluding the water abstraction charge) were set at the estimated costs incurred in the administration and compliance monitoring of allowed and licensed activity. Estimated costs were compared and found to be consistent with New South Wales fees.

The Australian Capital Territory licence fees cover the administrative costs of providing the licences. These fees are subject to annual indexing for the following financial year. Recent calculations showed that administration costs of licences were around \$300 per licence for low volume users. A new fee schedule came into effect on 1 July 2004. An electronic copy of the schedule of fees applicable to

licence holders as of 1 July 2005 is available online. The Australian Capital Territory does not exempt any water users from licence application and administration fees.

## Discussion and Assessment

The Australian Capital Territory Government is recovering the cost of expenditure on environmental resource management, program delivery and other water related expenditure through the water abstraction charge. The charge is applied through ACTEW on behalf of the Australian Capital Territory Government. The amount of funds collected by the water abstraction charge equates to the expenditure on the above items.

With the collection of the water abstraction charge and the review of the charge by the Independent Competition and Regulatory Commission, the Commission considers that the Australian Capital Territory has met its COAG commitment to recover all water resource management charges. It has also met its COAG commitment for these prices to be independently set or reviewed.

In preparing the water abstraction charge, the Independent Competition and Regulatory Commission called for submissions and enquiries from the public. The community was consulted and an issues paper and a draft report were prepared, including responses to these submissions.

On the basis of the above information, the Commission considers that the Australian Capital Territory has met its COAG commitment with regard to ensuring that public consultation and education about the charges were undertaken.

In addition, in conjunction with the consultation process and public availability of documents, the water abstraction charge is identified as a separate item on customer accounts. The Commission therefore considers that the Australian Capital Territory has met its COAG commitment with regard to the transparent handling of management costs and charges.

The *Water Resources Act 1998* provides for a range of fees for the issue of allocations, permits and licences, application and annual administration fees. Fees are set at the estimated costs incurred in the administration and compliance monitoring of allowed and licensed activity, and

are subject to an annual consumer price index adjustment.

The Commission notes that there are no charges for water allocations where the allocation relates to the taking of water through a practice that existed prior to 1998 and the allocation does not permit trade of the allocation. The Commission understands that these allocations are not significant.

On the basis of the above information, the Commission considers that the Australian Capital Territory has met its COAG commitment to demonstrate that licence fees are being set consistently with COAG pricing requirements.

### 8.4.3 Investment in New or Refurbished Infrastructure

#### Assessment Issues

The Commission will examine compliance where the Australian Capital Territory has decided to proceed with a particular project. In conducting its assessment, the Commission will consider:

- the extent to which the economic viability\* and ecological sustainability credentials of infrastructure proposals have been established prior to works commencing
- the environmental assessment processes for all projects, whether publicly or privately funded, and
- the economic viability appraisals of new or refurbished infrastructure proposals only where governments contribute funds.

\* The NCC 2004 National Competition Policy Assessment explained the economic viability test as involving consideration of whether a project will deliver an overall public benefit to Australia. Commercial or financial viability is an important element; 'a project that is not commercially viable may still satisfy the economic viability test if there is robust evidence that the project will deliver a net social benefit that outweighs the costs of not being commercially viable'.

Because of the prolonged regional drought and likely increases in population, the Australian Capital Territory has been assessing its future water supply needs. The Australian Capital Territory's water provider, ACTEW, was commissioned to undertake an investigation of an assessment of the need for future water storage and an analysis of future water supply options. ACTEW reports were produced in December 2004 and April 2005 respectively on these two issues. Consultants analysed different options, identifying technical, environmental, economic and social aspects of the whole project. The assessment of future

need took into account the following key factors: climate variability with respect to rainfall; evaporation and climate change; population growth; environmental flows; and the Australian Capital Territory water restrictions regime. Focus groups drawn from the community were used as part of the social impact and acceptance analysis.

ACTEW's final report recommended the construction of a \$40 million pipeline from the Murrumbidgee River, near Angle Crossing, to Googong Dam. This is considered a medium-term outcome that allows better use of the Googong Dam infrastructure. The ACTEW reports were independently reviewed by Hunter Water Australia. The Australian Capital Territory's Treasury has been assessing ACTEW's financial analysis of the future water options.

ACTEW continues to investigate the technical logistics and costs and how to optimise the benefits of the Angle Crossing option.

Concurrently, ACTEW is seeking to maximise the use of its infrastructure and all available Australian Capital Territory water. In April 2005, ACTEW announced the bulk water transfer project, which would see excess water from the Cotter River (above environmental flow requirements) transferred to and stored in the Googong Dam. The bulk water transfer project will significantly enhance the Australian Capital Territory's water supply and will make better use of its existing resources. This project has already commenced and it is expected to be completed by mid-2006. Once operating, the project is expected to provide an additional 12 gigalitres of water per year to the Googong Dam. This is likely to remove the need to introduce very severe water restrictions in the near future. The estimated cost of the project is \$25 million.

As a consequence of the 2003 bushfire's impact on the quality of water flowing into its dams, ACTEW upgraded its Mount Stromlo Treatment Plant and its Googong Dam Treatment Plant.

### Discussion and Assessment

These new infrastructure projects have been chosen after extensive investigation and consultation with both experts and the public. The investigations included an assessment of economic viability and environmental sustainability. As

the low flow rules for the environment (below the dams) are unchanged with the introduction of the new infrastructure, the Commission accepts that there will be no new significant environmental impacts.

On the basis of the above information, the Commission considers that the Australian Capital Territory has met its COAG commitments with regard to ensuring both economic viability and ecological sustainability credentials have been established prior to works commencing, as well as ensuring that environmental impacts were considered.

### 8.4.4 Release of Unallocated Water

#### Assessment Issues

The Commission will look for the Australian Capital Territory to demonstrate that any releases of unallocated water, including recycled or other sources of water, are occurring in a manner that complies with its COAG water reform obligations. In particular, the Commission will consider whether:

- water plans have increased allocations to consumptive use
- the water required to achieve environmental outcomes is adequately met prior to the release of unallocated water
- the impact on the environment is considered before any new entitlements are issued
- all other avenues for meeting demand have been carefully examined, and
- market-based mechanisms are employed in the release of unallocated water, including recycled water.

The Australian Capital Territory reports that all unallocated water in the Australian Capital Territory is allowed to pass through the territory as environmental flows. While the environment has an allocation of almost half the water resources in the territory, consumptive use has been only one third of the amount allocated, with the remainder being allowed to flow through. None of the available water has been released for additional consumptive use.



However, Section 28 (4) of the *Water Resources Act 1998* (as amended) provides that the allocation of water ‘must be exercised by public auction or public tender or, if either method is unsuccessful, by private contract’.

## Discussion and Assessment

The infrastructure developments discussed in Section 8.4.3 on Investment in New or Refurbished Infrastructure are designed to increase security of supply. In addition, these new infrastructure projects have been chosen after extensive investigation and consultation. Therefore the Commission considers that the Australian Capital Territory has met its COAG commitment to investigate all other avenues for meeting demand.

As the Australian Capital Territory currently releases unallocated water as environmental flows, the Commission considers that the territory has met its COAG commitments to meeting environmental outcomes and assessing the impact on the environment before releasing unallocated water.

Although there has been no release of unallocated water, other than to the environment, the Australian Capital Territory’s *Water Resources Act 1998* sets out market-based mechanisms for doing so, consistent with the National Water Initiative. The Commission therefore considers that the Australian Capital Territory has met its COAG commitment in this area.

### 8.4.5 Environmental Externalities

#### Assessment Issues

The Australian Capital Territory is required to:

- report the extent to which they are identifying and recovering environmental costs through their pricing regimes
- provide evidence that environmental costs imposed on and incurred by water businesses are transparently passed on through prices charged to water users
- where externalities are not included on pricing regimes, demonstrate price paths that will move towards achieving full cost recovery within a reasonable timeframe, and

- where not transparently incorporated into pricing regimes, show that they have identified externalities and, after examination, have concluded that inclusion of an externality in pricing is not feasible or practical.

In its 2003 report on the water abstraction charge, the Independent Competition and Regulatory Commission recognised the range of costs from externalities and took them into account when calculating the water abstraction charge. It was stated that the inclusion of these costs was consistent with the COAG agreement of August 2003. Specifically, water supply costs and flow costs were measured. Flow costs are defined as those costs that relate to water not returned to the system.

The water abstraction charge, as levied in the Australian Capital Territory, recovers the costs of environmental and catchment management. Environmental costs include costs that relate to providing environmental flows. Both of these components are discussed in greater detail in earlier sections of this assessment.

## Discussion and Assessment

The Australian Capital Territory has identified environmental externalities as costs associated with water not returning to the catchment. These externalities are included in the method used to calculate the water abstraction charge, and as such all costs of environment and catchment management are recovered.

On the basis of the above information, the Commission considers that the Australian Capital Territory has met its COAG commitment to identify environmental costs imposed on and incurred by water businesses.

The Australian Capital Territory has reported that all costs of managing environmental externalities are recovered through the water abstraction charge. The use of a separate water abstraction charge has meant that the Australian Capital Territory Government has identified the externalities when passing them onto consumers.

On the basis of the above information, the Commission considers that the Australian Capital Territory has met its COAG commitment to report on the extent to which it is recovering environmental externalities through pricing regimes and transparently passing on these costs through water charges.

## 8.4.6 Institutional Reform

### Assessment Issues

#### *Independent price regulator*

The Australian Capital Territory is required to:

- report on the role of economic regulators in setting or reviewing prices
- the extent to which conflicts of interest are addressed where the water industry regulator and the service provider are responsible to the same minister
- report on the public reporting and consultation aspects of the independent body's work, and its findings in relation to pricing compliance, and
- where the independent body's role is to review rather than set prices, the Australian Capital Territory is to report on the extent to which the results of reviews are addressed by the government, especially where pricing decisions are at variance with pricing recommendations.

#### *Participation in benchmarking processes*

The Commission will look for the Australian Capital Territory to demonstrate that participation in is continuing, to demonstrate that there has not been a decline in participation for metropolitan, non-major urban and rural service providers.

#### *Benchmarking the performance of water authorities—progress with development of a national framework*

The Australian Capital Territory is required to demonstrate that it has made progress with the development of a national framework for benchmarking of pricing and service quality for metropolitan, non-metropolitan and rural water delivery agencies, including whether appropriate consultation has occurred.

#### Independent Price Regulator

**ACTEW is a public monopoly. Its activities are investigated and prices are set independently by the Independent Competition and Regulatory Commission under price directions referred to it by the government.**

**The Independent Competition and Regulatory Commission adopts a 'cost building block' approach to calculate efficient levels of costs that become the notional or total revenue requirement for the utility (ICRC, 2004). The *Independent***

***Competition and Regulatory Commission Act 1997* requires the Commission to determine the appropriate rate of return on any capital invested in the regulated industry. It undertakes inter-jurisdictional comparisons using various criteria.**

**In assessing the efficient cost of providing services to the utility's customers, the Independent Competition and Regulatory Commission also considers the level and standard at which the service will be provided. Accurately defining service standards is an important part of the regulatory 'contract' between the utility and the Independent Competition and Regulatory Commission. In fact, the *Independent Competition and Regulatory Commission Act 1997* requires the regulatory authority to consider standards of quality, reliability and safety of regulated services.**

**In determining its decisions, the Independent Competition and Regulatory Commission receives submissions from the community and various industry and community organisations.**

#### Benchmarking

**ACTEW continues to report through the Water Services Association of Australia benchmarking framework. In addition, the Australian Capital Territory Government is participating in the development of a national benchmarking framework for the performance measurement of water and wastewater businesses (under the National Water Initiative process). The Independent Competition and Regulatory Commission undertook a benchmarking study for the last regulatory review covering the period 2004 to 2008.**

## Discussion and Assessment

### Independent Price Regulator

**The Australian Capital Territory has an independent price regulator, the Independent Competition and Regulatory Commission, which sets the prices for ACTEW. It also investigates the activities of ACTEW.**

**In reaching its decisions, the Independent Competition and Regulatory Commission receives submissions from the community and various industry and community organisations. The price determinations of the regulator are available to the public.**

**The Independent Competition and Regulatory Commission is not subject to the direction or control of either the Minister or any other referring authority in relation to any investigation, price direction, report, access agreement or arbitration, except where provided by the *Independent Competition and Regulatory Commission Act 1997* or another law of the territory. The Independent Competition and Regulatory Commission is responsible to the Treasurer for administrative matters, and to the Chief Minister for matters pertaining to the *Utilities Act 2000*. As ACTEW is responsible to the Chief Minister, and the pricing regulator is responsible to the Treasurer, there is no apparent conflict of interest in the provision and pricing of the water and wastewater services.**

On the basis of the above information, the Commission considers that the Australian Capital Territory has met its COAG commitment with regard to the use of an independent price regulator, and addressing possible conflicts of interest.

#### Benchmarking

ACTEW is participating in the Water Services Association of Australia framework; and the Australian Capital Territory Government is participating in the development of a national benchmarking framework. In addition, the Independent Competition and Regulatory Commission has undertaken benchmarking studies.

On the basis of this information, the Commission considers that the Australian Capital Territory has met its COAG commitment in the participation of benchmarking processes.

## 8.5 Integrating Water Management for Environmental and Other Public Benefit Outcomes

### 8.5.1 Institutional Arrangements

#### Assessment Issues

Water planning frameworks are to provide for adaptive management of surface and groundwater systems in order to meet productive, environmental and other public benefit outcomes; to identify the environmental and other public benefit outcomes sought for water systems; and to develop and implement management practices and institutional arrangements that will achieve those outcomes.

To this end, the Australian Capital Territory has agreed to establish effective and efficient management and institutional arrangements under the National Water Initiative.

For the 2005 National Competition Policy assessment, the Commission is looking for the Australian Capital Territory to have progressed its implementation of effective and efficient management and institutional arrangements to ensure the achievement of environmental outcomes.

The Commission is also looking for the Australian Capital Territory to describe the public education and consultation activities undertaken in relation to the integrated management of environmental water.

#### Effective and Efficient Management and Institutional Arrangements

**The *Water Resources Act 1998* provides for management and use of the Australian Capital Territory's water resources in a way that sustains the physical, economic and social wellbeing of the people of the territory, while protecting the ecosystems that depend on those resources.**

Under the *Water Resources Act 1998*, environmental water allocations are determined as a first priority in accordance with *Think water, act water* and the *Environmental Flow Guidelines*, both of which are statutory instruments under the Act.

*Think water, act water* describes the territory's water resources, proposed allocations, water allocations for various uses, and action to be taken to manage water resources. For all waterbodies in the Australian Capital Territory, the *Environmental Flow Guidelines* set the environmental flow requirements that are needed to maintain aquatic ecosystems, including groundwater.

In the Australian Capital Territory, water can be allocated for abstraction only after environmental flow requirements have been met. For groundwater, the volume of water available for allocation is limited to ten per cent of the available recharge. This is a precautionary approach that is designed to enable environmental values to be sustained.

The organisational arrangements for managing environmental water in the Australian Capital Territory include the Environment Protection Authority's responsibility to:

- administer and amend the *Environmental Flow Guidelines*, thus determining the amount of water allocated to the environment
- prepare *Think water, act water*, which sets out the flows required to meet environmental needs and specifies water allocations for a ten year period, and
- manage environmental flows in accordance with *Think water, act water*.

Other features of environmental water management that are significant in the Australian Capital Territory are discussed below.

#### *Audit, Review and Public Reporting Procedures*

The achievement of environmental and other public benefit outcomes and the adequacy of the water provision and management arrangements—as indicated in *Think water, act water* and the *Environmental Flow Guidelines*—are audited, reviewed and made publicly available.

The Australian Capital Territory is currently reviewing the *Environmental Flow Guidelines*. This process will update the guidelines with the latest scientific understanding, and most recent flow data. The territory released the Draft *Environmental Flow Guidelines* in May 2005 and expects to issue the final revised guidelines in 2006, after a community consultation process (Environment ACT, 2005).

The revised *Environmental Flow Guidelines* will be reviewed after a further five years of operation to determine if the ecological objectives are the most appropriate for individual waterbodies, and the environmental flows meet those objectives. This review may be conducted earlier if monitoring indicates it is warranted.

The Australian Capital Territory anticipates that actual river flows and their effect on stream structure and ecology will be the subject of an ongoing monitoring and evaluation program under the revised *Environmental Flow Guidelines*. The territory intends to use the results of this monitoring to adaptively manage the flow regime to enable a sustainable balance between environmental needs and human uses.

#### *Interconnected Surface and Ground Systems*

Groundwater and surface water systems are treated holistically in the Australian Capital Territory. *Think water, act water* limits groundwater extraction to ten per cent of groundwater recharge within a subcatchment to ensure it has minimal impact on streamflows.

The Australian Capital Territory recognises that continued investigation of groundwater resources and their effect on streamflow is required. As such, existing investigations will continue under the revised *Environmental Flow Guidelines*. These investigations will assist the government to establish recharge rates and the impact of extraction on stream baseflows, and improve water management regimes.

#### *High Conservation Value Rivers, Reaches and Groundwater Areas*

The territory categorises aquatic ecosystems into natural ecosystems, water supply ecosystems, modified ecosystems, and created ecosystems. Aquatic ecosystems categorised as 'natural ecosystems' are defined as those that have persisted in a relatively pristine condition.

Waterbodies in Tidbinbilla Nature Reserve and Namadgi National Park (other than those in the Cotter River catchment) are categorised as natural ecosystems in the Draft *Environmental Flow Guidelines* released in May 2005. The primary management goal for waterbodies in these areas is to maintain aquatic ecosystems in their pristine state. For example, under the draft guidelines abstraction will not be permitted from lakes and ponds in which natural ecosystems are to be maintained; and abstraction will be limited to that necessary or incidental to the sound management of Namadgi National Park or Tidbinbilla Nature Reserve.

#### *Public Education and Consultation Activities*

The Australian Capital Territory consults with the community and its key stakeholders on water management issues. The *Water Resources Act 1998* requires the territory to foster public education about the management of water resources.

In addition, the Australian Capital Territory must publicly consult on the preparation of its Water Resource Management Plan and *Environmental Flow Guidelines*. The Australian Capital Territory consulted the community during preparation of *Think water, act water*, which became the

new Water Resources Management Plan in July 2004, after being tabled in the Australian Capital Territory Legislative Assembly.

Public submissions will inform finalisation of the Draft *Environmental Flow Guidelines*. The public can access the draft guidelines and several supporting documents explaining environmental flows and their importance.

## Discussion and Assessment

### Effective and Efficient Management and Institutional Arrangements

The Australian Capital Territory's current legislative and administrative procedures include arrangements for managing water for environmental and public benefit outcomes.

The Australian Capital Territory formally recognises environmental water under the *Water Resources Act 1998*. Environmental flows take priority over all other uses of water when allocations are determined, and the *Environmental Flow Guidelines* set out the environmental flow requirements.

The Commission notes that the Australian Capital Territory has identified the Environment Protection Authority as its environmental water manager.

The Commission is aware that the Australian Capital Territory is continuing to enhance its understanding of the interaction between groundwater abstraction and stream baseflows, in order to improve water management regimes. In the absence of these detailed investigations, the Australian Capital Territory limits the volume of groundwater available for abstraction to ten per cent of the available recharge.

The Commission understands that the Australian Capital Territory is committed to monitoring and reviewing the adequacy of environmental water provision and management arrangements under *Think water, act water* and the *Environmental Flow Guidelines*.

The Commission acknowledges that the Australian Capital Territory does not make environmental water available for trade when it is not required to meet the environmental and other public benefit outcomes sought. This reflects the

fact that the Australian Capital Territory defines water for environmental and other public benefit outcomes through a flow regime, not as specific entitlements.

On the basis of the above discussion, the Commission considers that the Australian Capital Territory has made significant progress towards meeting its COAG commitment in this area.

### Public Education and Consultation

The *Water Resources Act 1998* places statutory public consultation and education commitments on the Australian Capital Territory Government. Under the Act, the government must foster public education about the management of water resources. The government must also consult the public during the preparation, and any subsequent review, of the Water Resources Management Plan and *Environmental Flow Guidelines*.

The Australian Capital Territory released the draft water resources management strategy *Think water, act water* for public comment in late 2003. This was accompanied by community meetings. This strategy became the territory's *Water Resources Management Plan 2004*.

A public consultation phase has also informed the recent review of the *Environmental Flow Guidelines*.

The Commission considers that the Australian Capital Territory has made significant progress towards meeting its COAG commitment in this area.

## 8.6 Water Resource Accounting

### 8.6.1 Benchmarking of Accounting Systems

#### Assessment Issue

The Commission is looking for the Australian Capital Territory to be actively engaged in the national benchmarking of jurisdictional water accounting systems by June 2005, to allow for the development of a national framework for comparison of water accounting systems to encourage continuous improvement leading to the adoption of best practice.

The Australian Capital Territory is involved in a national process to benchmark water accounting systems. Through this process, the Australian Capital Territory has committed to provide full access to its existing water accounting and entitlement registers and to other relevant water databases.

### Discussion and Assessment

The Commission considers that the Australian Capital Territory is satisfactorily progressing its COAG commitment to benchmark existing water accounting systems.

#### 8.6.2 Consolidated Water Accounts

##### Assessment Issue

The Australian Capital Territory is to identify situations where close interaction between groundwater aquifers and streamflow exist by the end of 2005, to support the integration of accounting for groundwater and surface water use.

Water resource accounting is provided for through the Australian Capital Territory's Water Resources Management Plan, *Think water, act water*. The plan describes each of the 32 subcatchments, the water resources and the allocation of resources to the environment and for consumptive use. The plan is updated every five years. Annual data on water licensing, allocation and consumption is detailed in the *Australian Capital Territory Water Report*.

The Australian Capital Territory advises that all surface and groundwater systems in the territory are interconnected and managed as a joint resource. The Australian Capital Territory has targeted and reviewed independently nine catchments (those catchments which have the highest water demand). A strong connectivity was found.

### Discussion and Assessment

The Australian Capital Territory has identified situations of significant interaction between groundwater and surface water within the territory and advised that all connected systems are currently managed as a single resource. The Commission also notes that the Australian Capital Territory is engaged in a national process to develop accounting system standards and guidelines.

The Commission considers that the Australian Capital Territory is satisfactorily progressing its COAG commitments to consolidate water accounts.

#### 8.6.3 Environmental Water Accounting

##### Assessment Issues

The Commission is looking for the Australian Capital Territory to have commenced the development of:

- a compatible register of new and existing environmental water, showing all relevant details of source, location, volume, security, use, environmental outcomes sought, and type, and
- annual reporting arrangements to include reporting on the environmental water rules, whether or not they were activated in a particular year, the extent to which rules were implemented and the overall effectiveness of the use of resources in the context of the environmental and other public benefit outcomes sought and achieved.

The Australian Capital Territory's allocation of water to the environment is currently detailed in *Think water, act water*. Annual data on environmental water allocations and provisions is detailed in the *Australian Capital Territory Water Report*.

The Australian Capital Territory is engaged in the national process to develop and adopt characteristics for compatible environmental water registers and principles for environmental water accounting.

### Discussion and Assessment

The Commission considers that the Australian Capital Territory is satisfactorily progressing its COAG commitments to environmental water accounting.

#### 8.6.4 Reporting

##### Assessment Issues

The Commission expects the Australian Capital Territory to be engaged in a process to develop national guidelines covering the application, scale, detail and frequency for open reporting, addressing:

- metered water use and associated compliance and enforcement actions
- trade outcomes
- environmental water releases and management actions, and
- availability of water access entitlements against the rules for availability and use.

Reference: National Water Initiative (paragraph 89)

**The Australian Capital Territory is currently participating in the national process to develop national water accounting and reporting guidelines. The Australian Capital Territory will then develop reporting arrangements that comply with these guidelines.**

## Discussion and Assessment

**The Commission considers that the Australian Capital Territory is satisfactorily progressing its COAG commitment to develop national guidelines for reporting water use and management information.**

## 8.7 Urban Water

### 8.7.1 Demand Management

#### Assessment Issues

The Commission will assess:

- whether the Australian Capital Territory has implemented the Water Efficiency Labelling and Standards Scheme, including mandatory labelling and minimum standards for agreed appliances, and are undertaking compliance monitoring, and
- the extent to which the implementation of the Water Efficiency Labelling and Standards Scheme has been actively communicated to consumers.

The Commission will also look for the Australian Capital Territory to report on progress with the review of water restrictions and the implementation of management responses to supply and discharge system losses.

**The Australian Capital Territory is participating in the Water Efficiency Labelling and Standards Scheme and in March 2005 enacted the Water Efficiency Labelling and Standards template legislation. The Australian Capital Territory**

**introduced temporary water restrictions in December 2002 and adopted a five-stage restrictions scheme that is based on diminished levels of water storage. This scheme incorporated key water saving targets. Through a community awareness and education campaign the community was informed of the scheme. This contributed to the achievement of water saving targets.**

The initial temporary water restrictions scheme was amended in October 2005. Conservation measures in Stage 1 were changed to set a lower water savings target. This replaced the previous Stage 1. These measures are being trialled over summer 2005–06 as the basis for a future set of permanent water conservation measures. These low level restrictions extend the scope as standard efficient water use practice.

## Discussion and Assessment

The review of water restrictions and the implementation of management responses to supply and discharge system losses are ongoing actions.

**The Commission considers that the Australian Capital Territory has met its COAG commitments in relation to the national Water Efficiency Labelling and Standards Scheme.**

### 8.7.2 Innovation and Capacity Building to Create Water Sensitive Australian Cities

#### Assessment Issues

The Commission will assess whether the Australian Capital Territory has:

- developed and applied national health and environmental guidelines for recycled water and stormwater
- commenced a process to evaluate existing 'icon' water sensitive urban developments to identify knowledge gaps and lessons for future strategically located developments, and
- undertaken adequate public consultation and education as part of these commitments.

**A water saving target of *Think water, act water* is to increase the use of reclaimed water. Using greywater may help achieve this re-use target. Greywater use guidelines for residential properties in Canberra have been developed and were released in December 2004. They were prepared**

by Australian Capital Territory Health in partnership with Environment ACT, ACTEW and the Australian Capital Territory Planning and Land Authority.

A key component of *Think water, act water* is the implementation of water sensitive urban design principles into urban, commercial and industrial development. This is being carried out in conjunction with the Australian Capital Territory Planning and Land Authority. Draft Australian Capital Territory guidelines on water sensitive urban design have been prepared and are to be released soon.

#### Discussion and Assessment

The Commission notes that the Australian Capital Territory has a number of initiatives in place to encourage and facilitate the adoption of water sensitive urban design.

However, the Australian Capital Territory has not commenced a process to evaluate existing 'icon' water sensitive urban developments to identify knowledge gaps and lessons for future strategically located developments. The Commission considers that the Australian Capital Territory has made some progress towards meeting its COAG commitments in innovation and capacity building for water sensitive cities.

## 8.8 Community Partnership and Adjustment

### Assessment Issues

The Commission will be examining the Australian Capital Territory's public consultation and education arrangements for consistency with its COAG obligations, for all aspects of the COAG water reform agenda. Particular assessment items are identified under each relevant section of this assessment framework.

With regard to addressing adjustment issues, the Commission will be looking for the Australian Capital Territory to demonstrate its commitment to close engagement with affected parties on possible responses, including consideration of, at least, the factors outlined in paragraph 97(i) of the National Water Initiative.

### Public Consultation and Education Arrangements

The Australian Capital Territory has consulted publicly on a range of water reform matters. Previous sections of this assessment detail the territory's consultation and education initiatives in relation to water resource planning, water pricing, environmental water and urban water. In summary:

- The *Water Resources Act 1998* places statutory public consultation and education commitments on the Australian Capital Territory Government. Under the Act, the government must foster public education about the management of water resources. Accordingly, the territory undertook public consultation before finalising its strategy for sustainable water resource management, *Think water, act water* in April 2004. It developed the strategy through a public process that involved release of a draft in November 2003 for three months of public comment. This strategy became the territory's *Water Resources Management Plan 2004*.
- Community involvement and partnership are built into *Think water, act water*. The territory must consult the public during future reviews of this strategy, as well as the *Environmental Flow Guidelines*.

### Adjustment Issues

The Australian Capital Territory advised the Commission that managing adjustment issues arising from reductions to water access entitlements has not been an issue to date. As such, close community engagement on this issue has not been required.

### Discussion and Assessment

Community involvement and partnership is a key component of *Think water, act water*, as is public education. This was demonstrated during the community engagement process to develop *Think water, act water* and the recent review of the *Environmental Flow Guidelines*. Furthermore, *Think water, act water* advocates a transparent adaptive management approach to addressing water resource management that incorporates public consultation.



The Commission acknowledges that managing adjustment has not been an issue for the Australian Capital Territory to date, and therefore close community engagement on this issue has not been required.

The Commission considers that the Australian Capital Territory has met its COAG commitment in this area.

## 8.9 National Water Quality Management Strategy

### Assessment Issues

The Commission is looking for the Australian Capital Territory to demonstrate continued and active implementation of the National Water Quality Management Strategy (NWQMS). In undertaking this assessment, the Commission will be guided by the expectations identified in the 2001 paper on implementation and the approach taken in previous National Competition Policy assessments.

The Commission will consider the extent to which the implementation of other water reform commitments recognises and gives effect to the NWQMS.

The 2005 National Competition Policy assessment will consider the Australian Capital Territory's implementation of guidelines that have been finalised since the last assessment.

The 2005 National Competition Policy assessment will consider whether the Australian Capital Territory has fully implemented the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000*, and the *Australian Guidelines for Water Quality Monitoring and Reporting 2000* since the 2003 assessment.

### Implementation

In 2001 the Australian Capital Territory agreed to a two-yearly review of its implementation of NWQMS guidelines. The 2003 National Competition Policy assessment examined the territory's progress for 2001 to 2003. The 2003 National Competition Policy assessment found that the Australian Capital Territory was making satisfactory progress in implementing policies that reflect the NWQMS framework.

The Australian Capital Territory has continued to implement the NWQMS guidelines. NWQMS initiatives are principally incorporated through codes of practice covering water quality, water monitoring and wastewater management.

In particular, since the 2003 National Competition Policy assessment, the Australian Capital Territory has:

- refined national and regional guidelines for site specific applications within various catchments of the Australian Capital Territory. This tailored approach addressed the primary management aims for each catchment including the water quality objectives, then provided appropriate guideline values for relevant indicators as determined from an assessment of site specific data. This approach allowed for different levels of protection in different catchments, depending on the values identified in the territory's *Water Resources Management Plan 2004*
- reviewed the Australian Capital Territory water quality standards set out in Schedule 4 of the Environment Protection Regulations 1997. The review specifically incorporated the guidance of the NWQMS (Paper 4) to site-specific refinement. The reviewed Schedule is currently being considered by the territory Cabinet for regulation amendments, and
- reviewed its water monitoring and assessment program before issuing any new monitoring contracts. The program includes water quality, streamflow and biological monitoring. The review of the program took into consideration guidance from NWQMS Paper 7 to ensure that it was consistent with national requirements.

The review resulted in minor changes to the study design of several monitoring programs and included a requirement for tenderers to provide more detailed information on sampling methods and equipment. Changes were also made to ensure State of the Environment reporting requirements were satisfied. Quality assurance and control was a paramount concern in reviewing the monitoring program.

The biological monitoring data are used to ascertain ecosystem diversity. The water quality data, which may be interpreted in combination with streamflow data, are

used to determine trends in the Australian Capital Territory rivers and lakes. The biological results are assessed using reference sites under the AusRivAs system, whilst the water quality data are assessed using the Australian Capital Territory Water Quality Standards set out in the Environment Protection Regulations 1997. The results of this analysis are published in an annual *Australian Capital Territory Water Report*.

#### Water Reform Commitments

The Australian Capital Territory has continued to give effect to the NWQMS through its other water reform commitments since the 2003 National Competition Policy assessment. As the Draft *Environmental Flow Guidelines* explain, implementation of the *Water Resources Act 1998* needs to be consistent with *Think water, act water*.

Three types of water use catchments are identified in *Think water, act water*—‘conservation’, ‘water supply’, and ‘drainage and open space’. The plan specifies the primary environmental and use values of waterbodies in the Australian Capital Territory for each of these types of catchment.

Under the general principles and policies, *Think water, act water* requires that planning be guided by the principles of ecological sustainability and exclude catchment land and water uses that impact on the sustainability of environmental or water use values. It is therefore necessary that appropriate flows be provided to protect the environmental and use values of Australian Capital Territory waterbodies.

*Think water, act water* explicitly requires that environmental flows be maintained. This is to ensure that the streamflow and quality of discharges from all catchments protect environmental values of downstream water.

Four principles are elaborated to achieve this objective:

- landuse and management practice shall be cognisant of streamflow and water quality impacts downstream
- streamflow diversions shall be restricted to authorised diversions
- lake and reservoir releases shall be consistent with the protection of downstream ecology and water uses, and
- groundwater abstraction shall be consistent with authorised abstraction.

Implementing these policies necessitates defining quantitative *Environmental Flow Guidelines* for all streams, rivers, lakes and aquifers in the Australian Capital Territory.

#### Discussion and Assessment

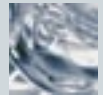
The Australian Capital Territory has demonstrated continued implementation of the NWQMS. Since the 2003 National Competition Policy assessment, the Australian Capital Territory has reviewed both its water quality standards, and water quality monitoring programs to make them consistent with the NWQMS (Papers 4 and 7, respectively).

In addition, the Commission considers that the Australian Capital Territory has continued to recognise and give effect to the NWQMS through its water planning processes.

On the basis of the information provided by the territory, the Commission considers that the Australian Capital Territory has made significant progress towards meeting its COAG commitment in this area.

# NORTHERN TERRITORY

# 9



# NORTHERN TERRITORY

## 9.1 Implementation

### Assessment Issues

The Commission is looking for the Northern Territory, as a signatory to the National Water Initiative, to:

- have completed its National Water Initiative implementation plan, and
- where cross-jurisdictional water sharing agreements exist, have commenced a review of existing agreements to ensure their consistency with the National Water Initiative and identify those instances where any new agreements may be required.

**The Northern Territory provided the Commission with a draft implementation plan on 5 August 2005. This draft was assessed by the Commission and comments were provided back to the Northern Territory on how the implementation plan could be improved for it to be considered for accreditation.**

**At the time of this 2005 National Competition Policy assessment, the Commission has yet to receive a revised implementation plan from the Northern Territory.**

**The Northern Territory is not currently a signatory to any cross-jurisdictional water sharing arrangements.**

**There is no formal agreement for the joint management of the Great Artesian Basin's groundwater resources; however, the Northern Territory is a member of the Great Artesian Basin Coordinating Committee, along with the Australian, South Australian, Queensland and New South Wales Governments and stakeholders, to improve resource management in the basin.**

**The Northern Territory states that it has had very preliminary discussions with Queensland about a possible cross-jurisdictional memorandum of understanding regarding cross-border notification of future water resource development in the Gulf of Carpentaria region.**

### Discussion and Assessment

**The timetable for the Northern Territory completing an implementation plan and having it assessed and accredited by the National Water Commission has been revised. The Northern Territory was originally asked to provide a final implementation plan, incorporating the Commission's**

**comments, by September 2005. The Commission is expected to consider plans for accreditation early in 2006.**

**The Northern Territory is taking steps to include mechanisms in its water reform framework for identifying areas that could potentially require a new water sharing agreement between jurisdictions.**

**The Commission notes, however, that the Northern Territory is participating in national processes under the National Water Initiative (COAG, 2004a) to carry out water reform activities both within the state and across jurisdictions, with agreed timeframes, to improve water resource management.**

**The Commission considers that the Northern Territory is making progress in this area. Submission of the territory's finalised implementation plan is an outstanding matter.**

## 9.2 Water Access Entitlements and Planning Framework

### 9.2.1 Water Access Entitlements

#### Assessment Issues

The Commission is seeking detailed information from the Northern Territory with regard to its current arrangements for the provision of water access entitlements. The Commission is looking for the Northern Territory to:

- have completed the conversion of water access entitlements to entitlement systems in line with the principles and timeframes of its 1994 Water Reform Framework commitment
- demonstrate the commencement of incorporation of the National Water Initiative water access entitlement requirements into its legislative and administrative regimes
- have made significant progress in the development of compatible, publicly accessible systems for registering water access entitlements and trades, including recognition of third party interests. In particular, the Northern Territory is to advise on the current status of its entitlement register with regard to the registration of third party interests and indicate its plans to implement a more robust register by 2006, to meet its COAG obligation, and
- report on the public consultation and education processes in place for the introduction or review of entitlement regimes.

The Northern Territory Government has legislated to establish systems of water entitlements under the provision of the *Water Act 2004*.

Under the *Water Act 2004*, the right to the use, flow and control of all water in the Northern Territory is vested in the state government. The Controller of Water Resources is appointed by, and accountable to, the Minister for Natural Resources, Environment and Heritage, for the day-to-day administration of the Act, with assistance given through the Department of Natural Resources, Environment and the Arts.

#### Licences

Water resources in the Northern Territory are allocated for consumptive uses through water licences.

Licences may be granted for the taking of water in a waterway, or for taking water from a bore.

Under the Act, the Northern Territory's Controller of Water Resources may grant a licence, with terms and conditions, for a period not exceeding ten years. A licence may be granted for longer than ten years only with the minister's consent.

Water licences are separated from land title and specified in terms of ownership, volume and reliability. Licences set the conditions to be met, including volumetric limits on extractive use through water entitlements, recording and reporting rates of use, methods of application and purpose of use.

All use of water, both surface water and groundwater, requires a licence. The exceptions are for stock and domestic use (which is granted by virtue of occupation of land) and bores for purposes other than irrigation with less than 15 litres per second capacity.

The Northern Territory states that all licensees report metered extraction, both monthly and annually, on the type(s) of water use and water efficiency measures. If licences are not being used, such as sleeper and dozer licences, then the Controller of Water Resources is empowered to amend or revoke the licence.

The Northern Territory is planning a review of existing water licensing arrangements. It is likely that the *Water Act 2004* and associated water regulations will be amended in accordance with the outcomes of this review. This is

necessary to meet the requirements of the National Water Initiative. The Northern Territory states the amendments will be subject to appropriate public and industry stakeholder consultation, which is expected to be completed by the end of 2006. Passage of amending legislation and amendment to the regulations should be completed in 2007.

#### Beneficial Use Entitlements

Water entitlements are allocated under water licences for water for one or more beneficial uses. Seven beneficial use categories are recognised under the *Water Act 2004*:

- agriculture
- aquaculture
- public water supply
- environment
- cultural
- industry, and
- rural stock and domestic.

#### Permits

##### *Surface water*

Under the *Water Act 2004*, a permit is required for the construction of any works to establish or alter:

- a rural dam of greater than three metres bank height and catchment area of greater than five square kilometres
- a water storage, or
- a water control structure.

A permit is granted for one year, with conditions to control the construction of works.

##### *Groundwater*

Bores must be drilled by a licensed driller. All bores within a water control district (see Section 9.2.3 on Water Planning and Addressing Currently Overallocated and/ or Overused Systems) require a construction permit. Drillers are required to provide the Controller of Water Resources with certain prescribed information and samples.

As noted earlier, extraction from stock and domestic bores does not require a licence. All non-stock and domestic bores in the Northern Territory that are capable of delivering more than 15 litres per second require an extraction licence.

All non-stock and domestic bores of lesser capacity require an extraction licence if they are located in any declared water control district, other than the Darwin Rural Water Control District. If allocated entitlements are not used within a reasonable period, the licence may be revoked in full or in part.

#### Entitlement Conversion

The Northern Territory states that at the end November 2005, there were 168 freshwater extraction licences registered. Some 59 per cent of the total allocated volume (up to 87.4 gigalitres per year) is accounted for in 27 public water supply licences. The 41 per cent balance of freshwater allocation (up to 61.2 gigalitres per year) is accounted for in 141 licences, predominantly for small-scale private irrigation.

These licences are not expected to undergo any conversion process until amendments to the *Water Act 2004* have been finalised. This review is expected to be completed in 2006, with subsequent conversions to be completed in 2007. This means the licensing systems will not fully comply with the National Water Initiative until then.

#### Water Access Licence Registers

The Northern Territory has a register of water entitlements and licences. The registry database contains details of licence holders, quantities of water allocated and dates of renewal. It does not record third-party interests.

The register is maintained as an electronic database that is routinely updated as part of licence administration by each of the three regional offices of the Department of Natural Resources, Environment and the Arts. A printed copy of the register only is available from the Department of Natural Resources, Environment and The Arts.

The Northern Territory is of the view that, although third-party interests could be readily incorporated into the register, there is no demand for this from licence holders or financial institutions. In relation to this, the Northern Territory states that, there has so far been only one request for registration of a third-party financial interest in an entitlement. This is noted on the specific agency file maintained for the entitlement.

The Northern Territory is participating in the development of nationally compatible registers for water access entitlements through an intergovernmental committee under the Natural Resources Management Ministerial Council (see Section 9.3 on Water Markets and Trading). The Northern Territory anticipates that the electronic database will be extended early in 2006 to record third-party interests.

#### Public Consultation and Education

Public consultation and education relating to water licences within the territory is delivered as part of the activities for water planning through regional steering committees. The steering committees consist of community and stakeholder representatives who are responsible for reporting to the government on the outcomes of general public and specific interest group feedback, as well as its own deliberations on water allocation planning issues for the region under consideration (see Section 9.2.3 on Water Planning and Addressing Currently Overallocated and/ or Overused Systems).

### Discussion and Assessment

#### Licences

As discussed in previous National Competition Policy assessments, licences in the Northern Territory are issued for a period of ten years only—not as perpetual shares of water available for consumption. Under the National Water Initiative, licences are to be issued in perpetuity.

#### Entitlement Conversion

The Commission notes that the Northern Territory has yet to begin a process to convert its water licences into water entitlements that meet the requirements of the National Water Initiative. Even so, the few licences that exist in the territory are expected to be converted to meet the requirements of the National Water Initiative after legislative amendments in 2007. The commitment is to bring the entitlement conversion into line with the agreement by 2006. The Commission urges the Northern Territory to complete its entitlement conversion process as expeditiously as possible and in keeping with National Water Initiative timelines.

### Water Access Licence Registers

The Northern Territory has a publicly available system for registering water access entitlements and trades. The territory has yet to include third-party interests in the register due to there being no perceived demand for this information. The Northern Territory has indicated it anticipates including third-party interests in the register in 2006.

The Commission notes the Northern Territory's participation in the committee to develop nationally consistent registers for water access entitlements and trades by 2006.

### Public Consultation and Education

Public consultation and education are carried out through steering committees formed for the development of water allocation plans. Community reference groups are separately charged with implementation of the plans. Although the role of the steering committees is understood, it is unclear what activities the committees undertake for consultative and educational purposes.

The Commission is of the view that the Northern Territory has made satisfactory progress in the area of water access entitlements. The Commission will continue to track the Northern Territory's progress with entitlement conversion to make sure it is completed within current timeframes, and that it is consistent with its National Water Initiative commitments.

## 9.2.2 Environmental and Other Public Benefit Outcomes

### Assessment Issues

The Commission is looking for the Northern Territory Government to have commenced the process to incorporate the National Water Initiative architecture for the provision of water for environmental and other public benefit outcomes into its water entitlement, planning and management arrangements.

The Northern Territory states that water for environmental and other public benefit outcomes is provided generally throughout the territory through a Water Allocation Planning and Management Framework. Under the *Water Act 2004*, environmental allocations are provided through statutory

declarations in water control districts with completed water allocation plans.

The statutory purpose of a water allocation plan is to ensure that consumptive use does not exceed the sustainable yield of the water resource after accounting for the environmental allocation. The Northern Territory considers this limitation on consumptive use provides statutory recognition and security to allocations for environmental and other public benefits.

The Northern Territory has identified four water control districts where a water allocation plan is required. To date, only one district has a finalised water allocation plan. No specific environmental allocation is provided in areas outside this area covered by a plan.

Under the Water Allocation Planning and Management Framework, water allocations for non-consumptive use are determined using all available scientific research, which is directly related to environmental and other public benefit requirements. Allocations for consumptive use are subsequently made within the remaining available water resource. The contingent allocations provided for in the Northern Territory Water Allocation Planning and Management Framework were developed in the absence of scientific information, as outlined in the COAG framework. These are explained below.

### Top End (northern one-third of the Northern Territory)

#### Rivers

At least 80 per cent of flow at any time in any part of a river is allocated as water for non-consumptive use, and extraction for consumptive uses will not exceed the threshold level (equivalent to 20 per cent of flow at any time in any part of a river).

In the event that current or projected consumptive use exceeds the 20 per cent threshold level, new surface water licences will not be granted unless supported by directly related scientific research into environmental or other public benefit requirements.

#### Aquifers

At least 80 per cent of annual recharge is allocated as water for non-consumptive use, and extraction for consumptive uses will not exceed the threshold level (equivalent to 20 per cent of annual recharge).

In the event that current or projected consumptive use exceeds the 20 per cent threshold level, new groundwater licences will not be granted unless supported by either directly related scientific research into groundwater dependent ecosystem and cultural requirements or, in the absence of such research, hydrological modelling confirming that total groundwater discharge will not be reduced by more than 20 per cent.

Arid Zone (southern two-thirds of the Northern Territory)

#### *Rivers*

At least 95 per cent of flow at any time in any part of a river is allocated as water for non-consumptive use, and extraction for consumptive uses will not exceed the threshold level (equivalent to five per cent of flow at any time in any part of a river).

In the event that current or projected consumptive use exceeds the threshold levels of five per cent for river flow, new surface water licences will not be granted unless supported by directly related scientific research into environmental or other public benefit requirements.

#### *Aquifers*

There will be no reduction in groundwater discharges to dependent ecosystems, and total extraction over a period of at least 100 years will not exceed 80 per cent of the total aquifer storage at start of extraction.

In the event that current or projected consumptive use exceeds the threshold levels of 80 per cent of the consumptive pool for aquifers, or groundwater discharges to groundwater dependent ecosystems are impacted, new groundwater licences will not be granted unless supported by directly related scientific research into groundwater dependent ecosystem and cultural requirements.

The contingent rules outlined above apply both in the context of statutory regional water allocation planning, and in the day-to-day licensing decisions made in the absence of formally declared water allocation plans. The use of maximum and minimum thresholds in the framework allows for regionally different rules to be developed to suit the diverse span of hydrological conditions throughout the Northern Territory. Thus, individual water allocation plans may set restrictions on:

- water extractions that are less than the maximum thresholds, or
- environmental water provisions that are more than the minimum thresholds stipulated in the generic framework.

## Discussion and Assessment

The Northern Territory has demonstrated it has a framework in place for provision of water for environmental and other public benefit outcomes into its water entitlement, planning and management arrangements. This is through water allocation plans developed for water control districts under the *Water Act 2004*, and through the Water Allocation Planning and Management Framework. The Act provides a management regime for both surface water and groundwater sources (treated separately), and applying to all licensing decisions across the territory.

The Commission is concerned that the Northern Territory has not demonstrated undertaking any scientific studies to improve knowledge in this area. The Northern Territory recognises that scientific information on environmental water requirements in its water systems is limited. Contingent flow rules have been developed to provide water for the environment. These contingent rules are generic across water systems in the Top End and water systems in the Arid Zone.

The Commission acknowledges the relatively low level of overall water use in the Northern Territory, with an associated lower level of pressure on the water resource. Nevertheless, improving the scientific basis for flow rules will become increasingly important over time.

The Commission considers that for the purpose of this assessment, the Northern Territory has met its COAG commitments in this area.



### 9.2.3 Water Planning and Addressing Currently Overallocated and/or Overused Systems

#### Assessment Issues

In considering governments' arrangements for allocating water to the environment, in light of guidance provided by the 1994 COAG Water Reform Framework, the ARMCANZ/ ANZECC National Principles and the National Water Initiative, the Commission will expect the Northern Territory to establish arrangements that:

- are based on the best available science and use strategic and applied research (principles 2 and 11)
- achieve a balance between environmental needs and human use that provides the water needed to achieve the environmental outcomes, while recognising, in systems where there are existing users, the existing rights of those users (principles 1, 4, 5, 6 and 9)
- involve monitoring and adaptive management where the regular assessment of ecosystem health guides water management processes (principle 8), and
- involve stakeholder consultation and transparent processes that are robust, and ensure the timely provision of relevant information to all interested parties (principles 7 and 12).

The Commission is also looking for the Northern Territory Government to:

- demonstrate how its water management plans (and related arrangements) address the obligations in the 1994 Water Reform Framework and take account of the ARMCANZ/ ANZECC national principles, regarding the provisions of water to the environment. In particular, demonstrate completion (or near completion) of water management strategies that employ robust evaluations of the science and other public interest benefits for the remaining three water systems covered by its 1999 implementation programme
- report on progress with the determination of overallocated and/or overused systems not covered by its 1999 implementation programme and the pathways being developed to address them
- if the water allocated for environmental purposes for

particular river and groundwater sources is significantly different from that recommended by the best available science, demonstrate that this decision is based on a robust examination of the socio-economic evidence and taken in the context of an open and transparent community consultation process that makes explicit the tradeoffs

- demonstrate that an integrated catchment management approach has been adopted for the management of water and that planning processes and administrative arrangements reflect an integrated approach to natural resource management
- demonstrate water allocations in all the river systems and groundwater basins identified in its 1999 implementation programme is substantially complete
- demonstrate progress in developing a robust recharge assessment for the Ti-Tree Basin, taking account of its work in identifying groundwater dependent ecosystems, and
- provide an overview of the public consultation and education processes in place and adopted for water planning and for addressing overallocated and/or stressed resources.

#### Water Planning

**The *Water Act 2004* provides for the investigation, allocation, use, control, protection, management and administration of water resources in the Northern Territory. The Minister for Natural Resources, Environment and Heritage and the Controller of Water Resources are the consent authorities under the Act. The Department of Natural Resources, Environment and the Arts manages the day-to-day operational aspects of the Act, including conducting water resource investigations, monitoring compliance, preparing water allocation plans, and administering licences and permits. The minister has the capacity to regulate and restrict water extraction under emergency powers, and has wide discretion in relation to the making, format and content of a water allocation plan.**

There are six water control districts in the Northern Territory:

- Darwin Rural
- Gove
- Katherine
- Tennant Creek
- Ti Tree, and
- Alice Springs.

Water control districts are declared for the purposes of groundwater and/or surface water management.

Water allocation plans are prepared to manage water extraction in water control districts. The plans are developed to ensure that water is allocated to beneficial uses, and that the total water allocated is within the estimated sustainable yield. Water control districts are declared in those areas of the Northern Territory where potential development requires management under the provisions of the *Water Act 2004*.

Water allocation plans must be reviewed at least every five years and remain in force for periods not longer than ten years.

Further planning and management arrangements for water resources are provided through the integrated plan discussed below.

#### Integrated Catchment Management

The Northern Territory has an integrated approach to natural resource management through its territory-based plan called *The Integrated Natural Resource Management Plan for the Northern Territory: Sustaining Our Resources – People, Country and Enterprises*, which was released in March 2005 (Northern Territory Government, 2005).

The Landcare Council of the Northern Territory developed the integrated plan. This plan builds on existing natural resource management plans and strategies. It seeks to provide a strategy to use and conserve the territory's natural resources, and describes their current condition, forms of use, threats to their integrity, and responses to those threats. The five key assets that the natural resources are grouped into are:

- terrestrial biodiversity
- land

- inland waters
- coastal and marine, and
- community, natural resource management institutions and knowledge.

The integrated plan includes specific integrated natural resource management targets. These targets include (1) aspirational targets that are long term (over 50 years); (2) resource condition targets that are specific, measurable targets for achieving resource targets over a ten to 20 year period; and (3) management action targets that are short term (one to five years) goals, which contribute to achieving the longer term resource condition targets.

The Northern Territory Regional Investment Strategy was finalised in June 2005. It accompanies the Natural Resource Management Joint Australian and Northern Territory Government Steering Committee accredited Integrated Resource Management Plan. The management plan will be implemented in conjunction with the National Action Plan for Salinity and Water Quality, and the National Heritage Trust strategies.

#### Provisions for the Environment

Under the *Water Act 2004*, allocations for the environment, as an identified beneficial use, are provided through the water allocation planning process. Conditions on licences for consumptive uses are designed to ensure that the sustainable yield of the water resource, after accounting for the environmental allocation, is not exceeded. This limitation on extractions ensures water remains in a system for environmental and other public benefit outcomes.

Currently the only region in the Northern Territory to be covered by a finalised water allocation plan is the Ti Tree region. This plan, called the Ti Tree Regional Water Resource Strategy, provides flow requirements specific to the environment in that region.

As noted in previous National Competition Policy assessments, the Northern Territory is using the results of five major research projects on environmental flows in the Daly River, carried out under the National River Health Program – Environmental Flows Initiative, to provide a best available scientific basis for establishing environmental flows.

These projects were:

- modelling dry season flows and predicting the impact of water extraction on a flagship species – the Pig-Nosed Turtle (*Carettochelys insculpta*)
- tree water use and sources of transpired water in riparian vegetation along the Daly River, Northern Territory
- environmental water requirements of ribbon weed (*Vallisneria nana*) in the Daly River, Northern Territory
- periphyton and phytoplankton (algae) response to reduced dry season flows in the Daly River, and
- inventory and risk assessment of water dependent ecosystems in the Daly Basin.

Previously, the National Competition Council has considered that these research projects provide an appropriate scientific basis for determining environmental flows.

In other areas not covered by a finalised water allocation plan, the limit on extractions from a water source in the Northern Territory is set out by the Water Allocation Planning and Management Framework. See Section 9.2.2 on Environmental and Other Public Benefit Outcomes for details on these limits.

In the case of the Top End, the highest level of consumptive use of surface water at the time of development—approximately 20 per cent—was chosen as the generic threshold for all Top End rivers. Since the lowest dry season flows in the Katherine River are derived from baseflow from groundwater, a 20 per cent threshold for reduction in groundwater discharges was required. This limit was chosen to better integrate surface water and groundwater management. Estimates of long-term recharge being equal to long-term baseflow led to the adoption of a 20 per cent groundwater recharge threshold level on Top End aquifers.

In the case of the Arid Zone, five per cent of flow was selected as the threshold level for extraction or diversion from rivers for consumptive purposes due to surface water development being so limited in the area, and in recognition of the important role rivers and wetlands play both ecologically and as sources of aquifer recharge. In general, this threshold level was considered by the Northern Territory to be reasonable for ensuring that the ecological and groundwater recharge services provided by Arid Zone

rivers would be maintained, while at the same time also allowing continued limited use for stock watering. For Arid Zone groundwater, providing that discharges to groundwater dependent ecosystems were protected, the contingent allocations for consumptive uses allowed for the aquifer storage to be depleted up to a level and within a time span that sought to ensure a reasonable measure of equity for current and future regional stakeholders.

#### Water Allocation Plans

The Northern Territory Government states that there are no overallocated systems within the territory that are not already covered in its 1999 implementation programme.

The Northern Territory has six water control districts. Under its 1999 implementation programme, the territory committed to developing four water allocation plans—for the Ti Tree, Darwin Rural, Katherine-Daly, and Alice Springs Water Control Districts—by the end of 2005. Water allocation plans for the Gove and Tenant Creek districts are not anticipated.

Although the Northern Territory has a low population base, low development, with large undisturbed areas, there are regions that are being developed, such as the Daly River Basin.

At the time of this 2005 National Competition Policy assessment, the Northern Territory has completed one water allocation plan; for the Ti Tree region. The Northern Territory states that the process for completing plans for all districts identified in its 1999 implementation programme is expected to be completed by the end of 2009. An update of the progress of developing plans for the other three water control districts is provided below.

The Northern Territory considers that water allocation plans are prepared along the lines of the characteristics and components of Schedule E of the National Water Initiative.

For the purposes of assessing the Northern Territory's approach to incorporating the 1994 COAG water reform framework and the ARMCANZ/ANZECC National Principles for Provision of Water for Ecosystems into its water management arrangements, the Daly River system was looked at in detail for this 2005 National Competition Policy assessment. This system was selected due to it not having been reviewed in detail in previous National Competition Policy assessments, and it being relatively close to

finalisation (no other plans have been finalised since the 2004 National Competition Policy assessment (NCC, 2004b)).

#### *Alice Springs*

A public information session was conducted in June 2005 on water allocation planning and the timelines for completion of the Alice Springs Water Resource Strategy.

A draft Alice Springs Water Allocation Plan was released in August 2005 for public comment (DNREA, 2005). Two community forums were conducted in October 2005. The Alice Springs Water Resource Strategy Steering Committee met six times in November 2005 to consider public submissions and make recommendations for revision of the draft water allocation plan.

At the time of this 2005 National Competition Policy assessment, the draft Alice Springs Water Allocation Plan is being finalised and is expected to be submitted to the minister with the committee's final recommendations by March 2006.

#### *Darwin*

A draft water allocation plan for the Darwin region has yet to be developed.

The Northern Territory Government expects statutory declaration of a final water allocation plan to be made in early 2007. Public consultation will be undertaken ahead of this declaration.

#### *Katherine–Daly*

A draft water allocation plan for the Katherine–Daly region was released for public comment in November 2004 (DIPE, 2004a).

A suite of five Environmental Flows Initiative projects, as listed above in 'Provisions for the Environment', run between 1999 and 2002, created an inventory of the Daly region's aquatic ecosystems and established benchmark recommendations for environmental flow, habitat and water quality requirements to maintain river health. These five projects were synthesised in a report in 2003 on environmental water requirements for the Daly River. This integrated report was used to aid both integrated regional planning between 2004 and 2005 (through the Daly River Region Community Reference Group) and to guide and inform decision-making for further allocations to consumptive use in the region.

The Northern Territory Government's process for determining environmental flows for the Daly River takes a multidisciplinary approach, as shown in the environmental flows study. However, this study did not consider all aspects of the river, groundwater, floodplain and estuary. For example, research into environmental flow requirements for fish was not undertaken in the original study and has only recently commenced. The Northern Territory has considered surface and groundwater in the water allocation planning process, from the perspective that water management must be fully integrated. This issue is critical for the Daly River catchment, which the Northern Territory states has the highest groundwater fed baseflows in the Northern Territory, the highest intensity of existing and potential agricultural development, and therefore the highest potential risk of overallocation of dry season river flows.

The data used to carry out the environmental flow studies for the purpose of developing the Katherine–Daly Water Allocation Plan was the best available at the time, and the Northern Territory recognises that better information would be required to enable a more sophisticated set of flow objectives to be developed. While a number of aspects of the water regime were included in the recommendations of the environmental flows study, a relatively simplistic set of allocation rules has been implemented.

A maximum of between eight per cent and 20 per cent of river flow can be allocated at any point in time, meaning that less water can be extracted during the dry season than during the wet season. While this appears to be a conservative figure, it is apparent that parts of the community expect that a more comprehensive and scientific set of environmental flow provisions will be developed in the future.

Ongoing systematic monitoring of water quality and the behaviour of baseline groundwater spring flows in the Daly region has been minimal to date. Accordingly, the Northern Territory has recently committed funding over the next three years to further research and monitoring.

The Daly Region Community Reference Group was established in November 2003 to advise the Northern Territory Government on an integrated landuse plan, and water allocation planning for the Daly region. Finalisation of the Daly Water Allocation Plan was deferred in mid-

2004, so as to include consideration of the community reference group's recommendations for the Daly region. The Northern Territory Government sought a process for peer review and consideration of human use constraints in the Daly region through this community reference group. The group identified critical management elements not addressed in the water resource planning in the Daly River catchment and made a number of recommendations, including some specific to the water allocation plan. Furthermore, it recognised that Indigenous consultation had not been effective. The Commission notes that Indigenous representatives did not participate in the entire community reference group process.

The Daly Region Aboriginal Reference Group (through the Northern Land Council) was established to provide support for the development of better understanding of environmental and cultural water requirements in the Daly region. The Northern Territory is supporting this work through funding provided by the Department of Natural Resources, Environment and the Arts in recognition of the importance of direct stakeholder determination of environmental and cultural water requirements. These are projects that are currently underway in the Northern Territory that are seeking to determine Indigenous cultural values of water, to be incorporated into future water resource planning and environmental flow allocations.

Public consultation commenced early in 2004, in conjunction with the work of the Daly Region Community Reference Group. See Section 9.8 on Community Partnership and Adjustment.

The water allocation plan for the Katherine–Daly region is currently scheduled for completion at the end of 2006, under the direction of a new Daly Region Resource Management Committee (replacing the community reference group) and with guidance from the Daly Region Aboriginal Reference Group. It is expected that these two stakeholder bodies will subsequently take carriage of implementation and ongoing review of the water allocation plan for the Daly region upon its finalisation.

#### *Ti Tree*

The Ti Tree Region Water Resource Strategy, finalised in 2002 for the Ti Tree Water Control District, was the Northern Territory's first water allocation plan, developed

in accordance with the *Water Act 2004*. The Ti Tree Water Advisory Committee is responsible for promoting, reviewing and updating the Ti Tree Region Water Resource Strategy.

The 2004 National Competition Policy assessment found that the Ti Tree plan generally met the 1994 COAG Water Reform Framework requirements; however, the lack of transparency of the Northern Territory's process made it difficult to determine whether the strategy was based on the best available science and whether this affected the robustness of its consultative processes.

The Ti Tree Water Allocation Plan is expected to be reviewed before mid-2007 and revised for conformity with Schedule E of the National Water Initiative.

Under the Ti Tree plan, most of the Ti Tree Basin's surface water is reserved for identified water dependent ecosystems; however, the plan does not identify groundwater dependent ecosystems. Information on this was lacking at the time of the plan's preparation. To address this, the Northern Territory Government is progressing a number of research projects to determine where there are ecologies that depend on groundwater. The Northern Territory has committed to update the *Ti-Tree Region Water Resource Strategy* (DIPE, 2002b) on the basis of this new information.

In 2004, the Northern Territory and the CSIRO agreed that it was difficult to estimate long term recharge for the Ti Tree Basin and indicated that they would work together to develop a robust estimate of the annual recharge of the Ti Tree Basin by the time of the 2005 National Competition Policy assessment. This study has yet to deliver any outcomes but has progressed through identifying the existence and characteristics of groundwater dependent ecosystems.

#### Public Consultation and Education

Public consultation and education for water planning in the Northern Territory is delivered through the regional water allocation planning processes. Following some criticism from interest groups, these processes have been substantially modified since the initial water allocation plan for the Ti-Tree region was developed.

These consultative processes operate under the direction of the steering committee that is responsible for reporting to the Northern Territory Government on the outcomes of general public and specific interest group feedback, and its own deliberations, on water allocation planning issues for the region under consideration. The regional steering committees are made up of community and stakeholder representatives.

Consultation is initiated by release of a draft water allocation plan. Upon the release of a draft plan, public information sessions are undertaken to inform the community on the planning process and the issues relating to the particular region. This is followed by a submissions period for public comment on the draft plan. The draft plan is reviewed and revised in response to recommendations received from the steering committee for that region through several phases of public consultation.

Information on the Northern Territory's planning processes can also be accessed in the website of the Department of Natural Resources, Environment and the Arts.

## Discussion and Assessment

The Northern Territory has not indicated whether it has used any of the ARMCANZ/ANZECC National Principles for the Provision of Water for Ecosystems for developing any of its water policy or management approaches in the territory.

The *Water Act 2004* provides for the recognition of river and aquifer regulation and consumptive uses as potentially impacting on ecological values. The water allocation planning process and territory-wide management frameworks include provisions for meeting the general water regime necessary to sustain ecological values of aquatic ecosystems, whilst recognising the existing rights of other water users. Further allocation of water for any use is on the basis that water for environmental purposes is sustained.

Accountabilities in all aspects of management of environmental water are transparent and clearly defined. The Controller for Water Resources is responsible for the day-to-day management of environmental provisions and licensing arrangements under the *Water Act 2004*.

An adaptive management framework is provided for by

some monitoring regimes under the Northern Territory planning process that inform the adequacy of environmental water in water control districts, along with some research projects.

### Water Planning

The Commission is satisfied that the arrangements for water management in the Northern Territory have legislative backing and are consistent with COAG commitments and ARMCANZ/ANZECC National Principles for the Provision of Water for Ecosystems. There does not seem to be any clear relationship between the *Water Act 2004* and other environmental planning laws in the Northern Territory.

The Northern Territory has not, however, complied with the timeframes agreed in its 1999 implementation programme for substantially completing four water allocation plans by 2005, and it took considerable time to complete the one finalised plan. The Commission notes the additional work undertaken to improve the water allocation plan process since development of the first plan.

### Integrated Catchment Management

Through the integrated natural resource management plan, the Commission is satisfied that the Northern Territory has adopted an integrated catchment management approach for water resources. This is reflected through its water planning processes and administrative arrangements under the *Water Act 2004*.

### Provisions for the Environment

Through its water allocation planning process, the Northern Territory provides water for the environment. Environmental allocations are specified under a plan, and security for this allocation is provided through limiting consumptive use to ensure the water is available. The Northern Territory recognises it has limited scientific information on specific water systems. As such, it has developed contingent flow rules that are applicable across the territory. System specific flow rules will be implemented on finalisation of a water allocation plan.

### Water Allocation Plans

As noted above, the Northern Territory has completed only one water allocation plan for the four water control districts it identified in 1999 as requiring water planning. In reviewing the Northern Territory's processes for water management and determination of environmental flow requirements, the Daly system was looked at as an example.

The Commission considers the process of providing management through water control districts and further water planning through water allocation plans is a good one.

The Northern Territory has demonstrated near completion of water management strategies in the Katherine–Daly region; however, it has not demonstrated any significant progress in the other two remaining plan areas.

Despite efforts made, the preparation of the Ti Tree Water Allocation Plan still raises some concerns about the transparency of the Northern Territory's water planning processes, particularly given the absence of public information on the hydrologic modelling and a robust consultative process. The Northern Territory is expected to redress these concerns through a more transparent and broader consultative approach during the first review of the plan, which is to be completed by mid-2007.

Whilst it is clear that water resources within the territory are not under immediate threat of over-extraction, an essential aspect of water planning for future management is to ensure that the hydrology and ecology of the system and its dependent ecosystems are understood.

The Commission considers the Northern Territory has demonstrated progress in developing a robust recharge assessment for the Ti Tree Basin.

The Northern Territory has not reported on any specific activities being undertaken to determine any areas of overallocation and/ or overuse that are not covered in the four water allocation plan areas. The Commission notes however, that the integrated natural resource management plan goes some way to addressing these issues.

### Public Consultation and Education

Public consultation and education in the Northern Territory is carried out through the regional steering committees formed for the development of water allocation plans. Consultation activities have been improved since the development

of the Ti Tree plan due to criticism of the initial process undertaken.

The Commission is concerned that no public consultation or education is undertaken in areas outside of a water control district. However, the Commission does note the low level of water resource development in the territory.

Overall, the Commission considers that the Northern Territory has made some progress in this area.

## 9.2.4 Assigning Risks for Changes in Allocation

### Assessment Issues

The Commission expects the Northern Territory to demonstrate that it has a process and timetable in place to integrate the risk assignment framework into its legislative and administrative water entitlement and planning regimes, and to have applied the framework for any changes in allocations that have not been provided for in its current water plan overallocation pathways.

The Northern Territory considers that there is no immediate need for a risk assignment framework in the territory due to current low levels of water use.

The territory states it will develop policies for the allocation of a risk assignment framework in each of its Water Control Districts, in consultation with stakeholders, by June 2007. Following this, it expects to incorporate relevant risk assignment frameworks into the *Water Act 2004* and in relevant Water Allocation Plans that will meet requirements under the National Water Initiative.

### Discussion and Assessment

The Commission agrees that due to low levels of water resource development in the Northern Territory, there is little risk of a reduction in water entitlements associated with current water licences. However, this could become an issue in the future.

The Commission considers that although the Northern Territory has a basic timetable in place for integrating a risk assignment framework into its legislative and administrative water entitlement and planning regimes, the process, or major steps for achieving this has not been demonstrated.

The Commission considers that for the purpose of this assessment the Northern Territory has made some progress towards its COAG commitments in this area.

### 9.2.5 Indigenous Access

#### Assessment Issues

The Commission is looking for the Northern Territory to show that it has in place arrangements for the incorporation of indigenous water issues into water planning processes, including the recognition of the possible existence of native title rights to water.

**The Northern Territory states that the protection of Indigenous cultural rights to water for non-consumptive use is able to be provided for in the water allocation plans developed under the *Water Act 2004*.**

Indigenous issues are incorporated into water planning processes through the recognition of cultural beneficial uses as a primary water allocation, along with environmental uses. The Northern Territory states that the possible existence of native title rights to water is one of the issues that will become apparent, if relevant, during the public consultative processes for development of water allocation plans. The Northern Territory states that this has not arisen in the course of consultations to date for the Ti Tree, Alice Springs or Daly regional water allocation plans (consultation on the Darwin plan has yet to begin).

**The Northern Territory considers that consultation processes for the development of water allocation plans seeks to involve all regional stakeholders and actively promotes and supports Indigenous participation in keeping with not only their Indigenous values and objectives, but also their economic values and objectives.**

The Northern Territory Government is providing support for research into issues of recognition and value of Indigenous water, particularly in the Ti Tree and Daly regions. This research is being conducted independently from the Northern Territory Government, and is understood to be aimed at facilitating the identification, interpretation and appropriate recording of traditional cultural water values, both as an important outcome in its own right and with the intention that it may better inform water allocation decision-making.

See Section 9.2.3 on Water Planning and Addressing Currently Overallocated and/ or Overused Systems for detail on Indigenous consultation in the Daly region.

As an ongoing task beginning in June 2006, the Northern Territory plans to monitor and report on the provision of cultural beneficial use water allocations in the Northern Territory's water allocation plans.

### Discussion and Assessment

**The Northern Territory has arrangements in place for incorporating Indigenous issues into its water planning processes. The Northern Territory is also undertaking further research and activities to improve knowledge of Indigenous values, including in relation to indigenous water access.**

It is assumed that as no systems within the Northern Territory are overallocated, any new native title claim involving water should be able to be provided for.

The Commission considers that the Northern Territory has met its COAG commitments in this area.

### 9.2.6 Interception

#### Assessment Issues

The Commission will look for the Northern Territory to provide information on the steps being taken to implement water interception measures detailed in the National Water Initiative, including any application of the National Water Initiative provisions to recent activities.

**In the Northern Territory, all farm dams, bores, interception and storage of overland flows that are likely to result in significant interception are subject to licensing arrangements under the *Water Act 2004*.**

Under the Act, a construction permit is required to construct or alter a dam, water storage or water control structure if the works will materially diminish or increase flow or likely flow of water in or into a waterway. Permits are granted by the Controller of Water Resources.

Large-scale forest plantations are subject to the requirements of the *Environmental Assessment Act 1994*. The Northern Territory states that proposals for significant forest plantations are assessed for possible water resource impacts, including the issue of interception if relevant.



**Any development must operate under an accredited environmental management plan, which also includes appropriate monitoring and measures to ensure that interception does not reach unacceptable levels.**

**The Northern Territory Government considers that future landuse changes may have the potential to alter water balances in the Darwin Rural and Katherine–Daly areas. This issue is being investigated through a National Action Plan for Salinity and Water Quality project that aims to investigate and model the potential effects on groundwater balances in the Daly Region as a result of clearing land and then irrigating. This project is scheduled to be completed and the report should be available by the end of March 2006. The findings of this work will be taken into account when considering the need for further investigations in the Darwin Rural area.**

**The Northern Territory states that the effects of, and appropriate responses to, impacts on interception from landuse changes will be determined as water allocation plans are developed for the Darwin Rural and Katherine–Daly areas. This is expected to be completed by the end of 2009.**

### Discussion and Assessment

**The Northern Territory has licensing arrangements in place to manage interception activities. These arrangements have legislative backing and relate to surface and groundwater flows.**

**In addition to this, the Northern Territory is taking steps to address the impacts of landuse change on interception. This includes interception from plantation forestry, which will eventually be incorporated into the Northern Territory's water allocation plans.**

**The Commission considers that the Northern Territory has met its COAG commitments in this area.**

## 9.3 Water Markets and Trading

### Assessment Issues

Trading arrangements in water entitlements are to be instituted to maximise water's contribution to national income and welfare, where systems are physically connected or hydrologic connection and water supply considerations permit trading. Under the 1994 Water

Reform Framework, trading arrangements were to be finalised by 2005. The National Water Initiative expands and re-defines the 1994 water reform commitments.

Consistent with its National Water Initiative commitments, the Commission expects the Northern Territory to:

- have removed remaining institutional barriers to permanent and temporary intra and interstate trade
- demonstrate trading rules in existing water management plans facilitate trading consistent with the actions and outcomes of the National Water Initiative, or, if inconsistent, a process for review is in place
- demonstrate a process is in place to incorporate trading rules consistent with the National Water Initiative into new water plans, and
- have pathways in place by the end of 2004, leading to the full implementation by the end of 2006, of compatible, publicly-accessible and reliable water registers of all water access entitlements and trades.

**The Northern Territory's *Water Act 2004* provides for water access entitlements (licences) that are separate from land and permanently or temporarily tradeable.**

**Water trading is possible only once a water allocation plan for a water source (water control district) is complete.**

**At present, the Ti Tree Basin is the only system with an operational water allocation plan. The Ti Tree Basin plan restricts trading to within the two-aquifer management zones of the Basin, to ensure extractions remain within sustainable yield limits. There are no restrictions to trade within these two zones themselves.**

**With regard to the development of trading rules in new water allocation plans, the Northern Territory has previously advised that it will adopt two general trading principles to protect the environment and other users.**

- for river systems, upstream trade will be approved only after it has been demonstrated that there will be no impact on the environmental provisions of the relevant water allocation plan, and
- for groundwater sources, trading will be restricted to within aquifer transfers, reflecting the physical and environmental constraints of the systems.

The Northern Territory advises that there are no recent developments in the arrangements for intra-territory trade and that no trading activity has occurred in 2004–05. There is little demand for trade within the Northern Territory and a small number of issued licences (both in terms of quantity and volume) limit the market opportunities.

The Northern Territory also advises that there are no recent developments with regard to interstate trade and that, as in all past years, no trading activity occurred in 2004–05. The potential remains for interstate trades within the fully regulated water supply system of the Ord Irrigation Scheme, should it ever be extended into the Northern Territory. As previously agreed between the Northern Territory and Western Australia, it is still considered likely that this future trade would be managed through West Australian water legislation and regulations.

Preliminary consideration has commenced between the Northern Territory and Queensland of a possible memorandum of understanding for water resource management in the cross-border catchments of the Gulf of Carpentaria. These considerations may extend to include management arrangements for interstate trade in water entitlements. It should be noted, however, that there are currently no water access entitlements in operation in the Northern Territory portion of this region, and none are considered likely to arise or be required in the near future.

As noted in Section 9.2.1 on Water Access Entitlements, the Northern Territory has a water entitlement register, but does not currently provide for the registration of third-party interests. The Northern Territory advises that it intends to extend the capacity of its register database in early 2006 to record third-party interests. The register is not currently accessible to the public as an on demand service. The Northern Territory is currently considering making a publicly accessible form of the register available over the Internet in 2006. The Northern Territory is engaged in a national process to determine common characteristics to be applied to registry systems to achieve national compatibility.

## Discussion and Assessment

The Northern Territory has established effective legislative arrangements for temporary and permanent intra-territory water trading, commensurate with the small number of tradeable entitlements in the Territory.

The Commission notes that trading in water entitlements in the Northern Territory can only occur once the relevant water source water allocation plan has been finalised. The Commission notes the small scale of the potential market.

The Commission notes that the Northern Territory has developed appropriate trading rules to manage the potential impacts of trade on the environment and other users through its water allocation plans.

The Northern Territory has an entitlement register that defines entitlements. The Commission notes that the Northern Territory is updating its register to allow for the registration of third-party interests in early 2006, and is working to develop a publicly accessible version of this register. The Commission also notes that the Northern Territory is engaged in a national process to develop compatible registry arrangements.

The Commission considers the Northern Territory has made significant progress in meeting its COAG commitments with regard to water trading. The Commission looks for the Northern Territory to continue its work to finalise its water allocation plans to allow for expanded trading opportunities.

## 9.4 Best Practice Water Pricing and Institutional Arrangements

### 9.4.1 Water Storage and Delivery Pricing

#### 9.4.1a Metropolitan

##### Assessment Issues

##### *Full cost recovery*

The Northern Territory is required to demonstrate that there has been substantial movement towards upper bound pricing for all metropolitan water and waste water businesses. For those businesses that are not pricing close to the upper bound of cost recovery, the Northern Territory should demonstrate price paths are in place that will move them towards the upper bound of cost recovery.

##### *Dividends*

The Northern Territory is required to demonstrate that dividend policies for metropolitan water and wastewater businesses comply with COAG obligations, in particular, that it mirrors commercial practice and is competitively neutral.

### Cost Recovery

The Northern Territory provided data on the level of cost recovery of the Power and Water Corporation water and wastewater operations in Darwin in 2004–05. The water and wastewater operations from the Darwin supply centre earned sufficient operating income, overall, to recover total operating, debt servicing and asset refurbishment costs for the assessment period.

As the only metropolitan centre in the Northern Territory, the Power and Water Corporation's Darwin water and wastewater operations exceeded lower bound cost recovery over the assessment period, and were approximately 11 per cent below recovery of upper bound costs. The Northern Territory notes that options to increase water tariffs are currently under government consideration.

### Dividends

Under the *Government Owned Corporation Act 2001*, annual dividends are agreed between the shareholding minister (the Treasurer) and the Power and Water Corporation Board. Although the Act does not specify the quantum of annual dividend to be paid, the Northern Territory's Government Business Division Dividend Policy Statement acts as a reference for the Power and Water Corporation. This policy sets an ordinary dividend benchmark of 50 per cent of after tax profits, with scope to increase or decrease this percentage depending upon the specific circumstances and capital requirements of the entity.

According to its annual report, the Power and Water Corporation makes an annual dividend payment to the Northern Territory Government after due consideration of end of year financial results, the Power and Water Corporation's existing and target capital structure, future capital investment commitments and the capacity to pay in accordance with prudent financial management (Power and Water Corporation, 2005).

## Discussion and Assessment

### Cost Recovery

The Northern Territory provided information to show that the Power and Water Corporation's metropolitan water and wastewater operations (Darwin) are recovering the full costs of operations, maintenance and administration, as well as

debt servicing and asset consumption, but as yet are below recovery of upper bound costs.

The Commission notes that while price paths are not yet in place to increase the recovery of upper bound costs for the Darwin operations, options to increase water tariffs are currently under consideration by the Northern Territory.

On the basis of the above information, the Commission considers that the Northern Territory has made some progress toward meeting its COAG commitment with regard to full cost recovery for metropolitan water and wastewater operations.

### Dividends

Dividend payments for the Power and Water Corporation are paid out of company profits. The Corporation considers its existing and target capital structure, future capital investment commitments, and its capacity to pay.

On the basis of the above information, the Commission considers that the Northern Territory has met its COAG commitment with regard to dividend policies.

## 9.4.1b Rural and Regional

### Assessment Issues

The Northern Territory is required to demonstrate for rural and regional systems that:

- they have achieved at least the lower bound of cost recovery and are moving towards the upper bound, or
- they have established a price path to achieve at least the lower bound of cost recovery with transitional community service obligations made transparent, or
- for schemes where the lower bound of cost recovery is unlikely to be achieved in the long term, that they have made the community service obligations required to support the scheme transparent, and
- that they have made cross-subsidies transparent.

### Cost Recovery

For this 2005 National Competition Policy assessment, the Northern Territory provided data on the level of cost recovery of the Power and Water Corporation's Katherine, Tennant Creek and Alice Springs water and wastewater operations.

Alice Springs achieved lower bound cost recovery, while the Katherine and Tennant Creek operations made a loss. While operating losses were incurred in a number of rural and regional centres, the Northern Territory notes that the Power and Water Corporation is moving towards achieving compliance with COAG's minimum cost recovery requirements.

Pricing reform proposals, including tariff increases and restructuring, are currently being considered by the Northern Territory. The pricing reform process is expected to be finalised by the end of 2006 and it will be applied uniformly across the territory.

#### Community Service Obligations

The Northern Territory Government provides a community service obligation to the Power and Water Corporation. Community service obligations are paid for the provision of services to customers who are in receipt of the Northern Territory Government's Pension Concession Scheme. In addition, the payment is to fund a proportion of the shortfall incurred by the Power and Water Corporation in supplying water and wastewater services at gazetted uniform tariffs. The amount provided as a community service obligation has not changed since 2002, in part due to issues surrounding the valuation of the Power and Water Corporation's asset base.

The community service obligations provided to the Power and Water Corporation are transparently reported in the annual reports of the corporation's and the Northern Territory Government's budget papers.

#### Cross-subsidies

A uniform tariff policy has been adopted across the Northern Territory. The Northern Territory Government argues on this basis that traditional cross-subsidisation does not exist within the market. The disparity between the different regional operations of the Power and Water Corporation can be largely attributed to the allocation of community service obligation funding across supply centres and variations between actual and estimated costs of supply.

## Discussion and Assessment

### Cost Recovery

For the rural and regional water and wastewater operations, only the Alice Springs operations recovered the full costs of operations, maintenance, administration, debt servicing and asset consumption. The Katherine and Tennant Creek operations did not meet lower bound costs.

The Northern Territory notes that despite the losses incurred by a number of rural and regional centres, the Power and Water Corporation is moving towards achieving minimum cost recovery requirements. A pricing reform process currently being considered by the Northern Territory is expected to be finalised by the end of 2006 and applied uniformly across the territory.

On the basis of the above information, the Commission considers that the Northern Territory has made little progress towards meeting its COAG commitment with regard to full cost recovery for rural and regional water and wastewater operations. The pricing reforms currently being developed will be important in addressing these commitments.

In this context, the Commission is concerned with the expectation that the Northern Territory will continue to apply a uniform tariff structure across the territory without further justification from the government about the efficiency and equity of this approach.

### Community Service Obligations

The community service obligations made by the Northern Territory Government to the Power and Water Corporation are transparently reported in the corporation's annual reports.

The Northern Territory states that a community service obligation is paid to the Power and Water Corporation for the provision of services to Northern Territory pensioners, and to cover the shortfall to the Power and Water Corporation due to the below-cost uniform tariff as set in the territory.

The Commission notes that the community service obligation payable to the Power and Water Corporation has not changed since 2002, in part due to issues surrounding the valuation of the Power and Water Corporation's asset base. The Commission will look for the Northern Territory

to demonstrate, with the pricing reform currently under consideration, the appropriateness of applying a community service obligation which subsidises for the application of a uniform tariff across all regional supply centres.

Further discussions with the Northern Territory revealed that a community service obligation is also paid to cover the cost of water storage and delivery to Indigenous communities.

On the basis of this information, the Commission considers that the Northern Territory has made some progress toward meeting its COAG commitment with regard to the transparent reporting of community service obligations. The Commission is still concerned that the community service obligations do not appear to be viewed by the Northern Territory Government as transitional measures, and that alternatives are not actively being explored.

#### Cross-subsidies

The Northern Territory applies a uniform tariff across all water and wastewater operations. Nevertheless, the Northern Territory states that cross-subsidisation does not exist within the market, but that the differences in the costs of producing water are accounted for through the use of a community service obligation.

The Commission considers that using a uniform tariff across all sectors when the costs of service and delivery may not be the same constitutes a cross-subsidy. That is, the more expensive operations are being subsidised by the less expensive. In addition, it has been acknowledged that a proportion of the community service obligation provided to the Power and Water Corporation is to compensate for revenue shortfalls due to the uniform tariff.

While the Power and Water Corporation transparently identifies the community service obligation received from the Northern Territory Treasury, it is not clear what proportion of this is attributable to the subsidisation of pensioner charges, and which is attributable to the cross-subsidisation due to the application of a uniform tariff.

On the basis of the above information, the Commission considers that the Northern Territory has made some progress toward meeting its COAG commitment to making cross-subsidies transparent.

## 9.4.2 Cost Recovery for Planning and Management

### Assessment Issues

The Northern Territory is required to demonstrate that resource management costs are being recovered, consistent with COAG pricing obligations. In particular the Northern Territory is required to demonstrate:

- that costs associated with activities undertaken for governments are being recovered
- that prices to recover resource management costs are being independently set or reviewed
- the extent to which costs associated with the provision of licences for water extraction are being recovered
- the extent to which resource management costs are being recovered
- that resource management costs are transparently handled and publicly reported, and
- that adequate public consultation and education about water management charges has been undertaken.

The Northern Territory reported in 2004 that 56 licences were issued for surface water extraction. The majority (52) are held by small-scale private irrigators (entitled to six gigalitres) and four by the Power and Water Corporation (entitled to 44 gigalitres).

In 2004 there were 88 groundwater licences. Private users held 78 of the licences (entitled to 47 gigalitres) and the Power and Water Corporation held ten licences (entitled to 31 gigalitres).

For this 2005 National Competition Policy assessment, the Northern Territory advised that the total annual cost for water resource management associated with water extraction licences was approximately \$450,000. This is the total cost of surface water and groundwater extraction licence services provided by the Department Natural Resources, Environment and the Arts as at 2005. The full cost of \$450,000 is taxpayer funded; there are no fees or charges applied for any licences in the Northern Territory. As the Northern Territory Government reserves 80 per cent of surface water and groundwater for environmental use, it considers that the proportion of these management

costs potentially attributable to water users is \$90,000 (or 20 per cent of the total licensing cost of \$450,000). Of the 179 water licences in operation as at 2005, the Northern Territory considers that 81 are subject to the 1994 COAG Water Reform Framework and the 1999 Tripartite Agreement pricing obligations (or 100 per cent of all surface water licences and 15 per cent of groundwater licences, all of which are for public water supply).

The Northern Territory advised that it considered two options for recovering the costs apportioned to water users:

- a *pro rata* approach based on the number of licences in operation, and
- cost recovery on the basis of volumes extracted annually.

The Northern Territory Government considered that the volumetric approach represents a more equitable way to apportion costs. This approach would add approximately \$83,000 to the cost base of the Power and Water Corporation, equivalent to 0.23 per cent of its revenue from public water supply customers. The corporation would need to increase water tariffs by 0.10 cents a kilolitre to recover this additional operational cost directly from customers.

The Northern Territory considers that imposing such a small additional charge would not improve the efficiency of resource allocation, investment or consumption. Consequently it has not sought to recover licensing costs through water charges. It considers that providing this subsidy does not undermine the overall policy objectives of the 1994 COAG water reform agreement.

The *Water Act 2004* provisions allow the Controller of Water Resources to require a licensee to provide any data or information deemed necessary as part of the licence conditions. The Northern Territory argues that licensees bear a significant proportion of monitoring and reporting costs, but information was not provided to substantiate this statement.

## Discussion and Assessment

The Northern Territory has stated that the government will not charge for the recovery of costs associated with licence provision for surface water and groundwater extraction.

Nevertheless, the recovery of the costs associated with licence provision is a commitment of the COAG water reforms, and as such, the Commission considers that the Northern Territory has not met its COAG commitment with regard to demonstrating that the costs associated with the provision of licenses are recovered.

The Northern Territory has not provided information on government activities associated with water resource planning and management, other than the provision of licences. Nor has it been demonstrated as to the extent to which these costs are recovered through water use charges. In addition, no information was provided on the transparent handling and public reporting of water planning and management costs, or the degree of public consultation and education that takes place concerning these costs.

On the basis of the above information, the Commission considers that the Northern Territory has not met its COAG commitment with regard to these areas of cost recovery for planning and management.

### 9.4.3 Investment in New or Refurbished Infrastructure

#### Assessment Issues

The Commission will examine compliance where the Northern Territory has decided to proceed with a particular project. In conducting its assessment, the Commission will consider:

- the extent to which the economic viability and ecological sustainability credentials of infrastructure proposals have been established prior to works commencing
- the environmental assessment processes for all projects, whether publicly or privately funded, and
- the economic viability appraisals of new or refurbished infrastructure proposals only where governments contribute funds.

*\* The NCC 2004 NCP Assessment explained the economic viability test as involving consideration of whether a project will deliver an overall public benefit to Australia. Commercial or financial viability is an important element, "a project that is not commercially viable may still satisfy the economic viability test if there is robust evidence that the project will deliver a net social benefit that outweighs the costs of not being commercially viable".*

The Northern Territory reported that the Power and Water Corporation's Business Review Committee, which is chaired by the corporation's managing director and consists of all senior operational managers as well as a number of specialist advisors, governs the corporation's investment processes.

Under the Business Review Committee process, all capital investment and refurbishment projects over \$100,000 are subject to a business case approval process. Projects between \$100,000 and \$250,000 require a summarised business case to be completed, whilst projects over \$250,000 require a detailed business case. The business case includes environmental, social impact and economic viability reviews, risk assessments, and an investment and net present value analysis.

Under the *Environment Assessment Act 1994*, an environmental assessment is required to be carried out, where practicable, for all projects undertaken in the Northern Territory that could be reasonably considered by the minister to have a significant impact upon the environment.

No new publicly funded urban or rural water or wastewater infrastructure developments were announced in 2005.

### Discussion and Assessment

No new urban or rural infrastructure developments were announced in 2005. However the Commission notes the processes that the Northern Territory has in place to assess the environmental, ecological and economic merits of proposed infrastructure or refurbishment projects.

#### 9.4.4 Release of Unallocated Water

##### Assessment Issue

The Commission will look for the Northern Territory to demonstrate that any releases of unallocated water, including recycled or other sources of water, are occurring in a manner that complies with its COAG water reform obligations. In particular, the Commission will consider whether:

- water plans have increased allocations to consumptive use
- the water required to achieve environmental outcomes is

adequately met prior to the release of unallocated water

- the impact on the environment is considered before any new entitlements are issued
- all other avenues for meeting demand have been carefully examined, and
- market-based mechanisms are employed in the release of unallocated water, including recycled water.

No releases of unallocated water were made in the Northern Territory in 2005.

### Discussion and Assessment

The Commission notes that no release of unallocated water was made in the Northern Territory in 2005. Nevertheless, the Commission would look to the Northern Territory to put in place policy and water management arrangements consistent with the National Water Initiative that would enable proper assessment and release of unallocated water when this becomes necessary.

#### 9.4.5 Environmental Externalities

##### Assessment Issues

The Commission will look for the Northern Territory to:

- report the extent to which it is identifying and recovering environmental costs through its pricing regimes
- provide evidence that environmental costs imposed on and incurred by water businesses are transparently passed on through prices charged to water users
- where externalities are not included in pricing regimes, demonstrate price paths that will more towards achieving full cost recovery within a reasonable timeframe, and
- where not transparently incorporated into pricing regimes, show that they have identified externalities and, after examination, have concluded that inclusion of an externality in pricing is not feasible or practical.

**The Power and Water Corporation is required to meet a number of environmental requirements through legislation administered by the Department of Natural Resources, Environment and the Arts. The majority of these requirements arise through compliance with extraction and discharge licences issued under the *Water Act 2004*.**

A limited number of environmental requirements is also required under the *Waste Management and Pollution Control Act 2003* and National Pollution Inventory reporting.

Since 1998–99, the Power and Water Corporation has published an annual environmental report detailing the corporation's environmental objectives and the strategy to achieve these objectives and to manage environmental risks.

To the extent that these activities increase the Power and Water Corporation's operating costs, they will be reflected in the aggregated water and wastewater charge or a reduced dividend payment to the government. The Northern Territory does not currently charge a separate levy to reflect the cost of environmental externalities.

The Northern Territory considers that recognition of environmental costs is not necessary at this stage of the territory's economic development as current water consumption levels and irrigation appear to be insufficient to have any significant environmental implications.

### Discussion and Assessment

At present, the Northern Territory does not consider that current water consumption levels and irrigation activities are of a sufficient size to warrant the recognition and investigation of environmental costs from water use. While the Commission notes the level of economic development in the Northern Territory, it does not believe this provides sufficient reason to not examine in more detail the treatment of environmental externalities from water use in the Northern Territory.

The Northern Territory has noted a number of areas where the Power and Water Corporation acts to abide by environmental regulations, and that the costs of these activities may already be passed on through prices.

The Northern Territory also notes the costs of environmental regulations are passed on to the government through reduced profits (and therefore reduced dividend payments). The Commission does not consider this as an appropriate method for passing on environmental costs, without fuller consideration of the attribution of costs between user-groups, for example based on an impactor or beneficiary pays approach.

No separate environmental levy or charge is set, nor was a price path for inclusion of such a charge provided.

On the basis of the above information, the Commission considers that the Northern Territory has made little progress toward meeting its COAG commitment to transparently pass on the costs of environmental externalities.

## 9.4.6 Institutional Reform

### Assessment Issues

#### *Independent economic regulation*

The Northern Territory is required to provide information on the role of economic regulators in setting or reviewing prices, or price setting processes, and the extent to which conflicts of interest are addressed where the water industry regulator and the service provider are responsible to the same minister.

The Commission is interested in the public reporting and consultation aspects of the independent body's work, as well as its findings in relation to pricing compliance. Where the independent body's role is to review rather than set prices, the Commission will examine the manner in which the results of reviews are addressed by the relevant government, especially where pricing decisions are at variance with pricing recommendations.

#### *Institutional separation*

The Commission will look for the Northern Territory to show that there continues to be appropriate and transparent separation of responsibilities and safeguards against conflicts of interest.

#### *Participation in benchmarking processes*

The Commission will look for the Northern Territory to demonstrate that participation in national processes for inter-agency comparisons and benchmarking, and benchmarking systems managed by the Water Services Association of Australia, the Australian Water Association and the Australian National Committee on Irrigation and Drainage is continuing. The Northern Territory is also required to demonstrate that there has not been a decline in participation, for metropolitan, non-major urban and rural service providers.



*Benchmarking the performance of water authorities – progress with development of a national framework*

The Northern Territory is required to demonstrate that it has made progress with the development of a national framework for benchmarking of pricing and service quality for metropolitan, non-metropolitan and rural water delivery agencies, including whether appropriate consultation has occurred.

#### Independent Economic Regulation

**The *Water Supply and Sewerage Services Act 2001* transferred price-setting powers to the regulatory minister. In setting prices, the minister may seek independent advice from the Utilities Commission. Under the Act, the Utilities Commission is charged with monitoring and enforcing compliance with the pricing determination.**

The activities of the Utilities Commission in the water and sewerage industries relate mainly to licensing. The minister may assign some price and service standard monitoring functions to the Utilities Commission under his regulation powers.

Given that the uniform tariff policy for water supply and sewerage services is a Northern Territory Government initiative aimed at economic equity objectives, the Northern Territory believes it appropriate that the government determine the price of these services.

#### Institutional Separation

**The National Competition Council's February 2001 supplementary assessment found that the provisions contained within the *Water Supply and Sewerage Services Act 2001* and the extended role of the Utilities Commission to include water and wastewater services, satisfy the COAG commitment to separate the roles of service provision, standard setting, enforcement and resource management to improve service provision and regulation. The institutional arrangements assessed at that time have not varied.**

Although the Treasurer holds the position of both regulatory and shareholding minister for the Power and Water Corporation, directions can be issued to the corporation by the minister only if the corporation's board has been consulted and the board has been requested to issue advice on whether the direction is in the best interest of

the corporation and its subsidiaries. With the shareholding minister's approval, the Minister for Essential Services may also issue a direction to the Power and Water Corporation, provided that the above consultation process be undertaken. Additionally, any direction issued to the Power and Water Corporation is required to be tabled in parliament.

#### Benchmarking

As per previous assessment periods, the Power and Water Corporation continues to be an active participant in the Water Services Association of Australia benchmarking system. The Power and Water Corporation also contributes to the Australian Water Association process for major non-urban benchmarking.

In addition to the Power and Water Corporation's participation and support of the Water Services Association of Australia and Australian Water Association benchmarking initiatives, the corporation publicly releases a number of reports. These include: a *Water Quality Report* (annually since 2003) and *Wastewater Treatment, Reuse and Discharge Report* (inaugural 2004). *The Water Quality Report* details the Water and Power Corporations' commitment to drinking water quality management as well as other operational, safety and community initiatives. *The Wastewater Treatment, Reuse and Discharge Report* details the Water and Power Corporation's commitment to wastewater treatment and reclaimed water quality management as well as community involvement and awareness.

#### Discussion and Assessment

##### Independent Economic Regulation

From the information provided by the Northern Territory, the prices for water and service provision are set by the Northern Territory Government for equity purposes. In setting prices, the regulatory minister may seek independent advice from the Utilities Commission; however, the main activities of the Utilities Commission in the water and sewerage industries relate to licensing.

On the basis of the above information, the Commission considers that the Northern Territory has met its COAG commitment to report on the role of the independent economic regulator.

Because it appears that the reviewing and regulating powers of the Utilities Commission are limited, the Commission will maintain a watching brief on the review of water and wastewater prices set in the Northern Territory.

#### Institutional Separation

In the Northern Territory, the Treasurer holds the position of both regulatory and shareholding minister for the Power and Water Corporation. Directions can be issued to the Power and Water Corporation by the minister only if the corporation's board has been consulted and the board has been requested to issue advice whether the direction is in the best interest of the Power and Water Corporation and its subsidiaries.

On the basis of the above information, the Commission considers that the Northern Territory has met its COAG commitment with regard to safeguards against conflicts of interest.

#### Benchmarking

The Power and Water Corporation participates in the benchmarking activities of the Water Services Association of Australia and the Australian Water Association. In addition, the Power and Water Corporation publicly releases its own benchmarking data on water quality and operational, safety and community initiatives.

On the basis of the above information, the Commission considers that the Northern Territory has met its COAG commitment with regard to demonstrating participation in benchmarking systems.

## 9.5 Integrating Water Management for Environmental and Other Public Benefit Outcomes

### 9.5.1 Institutional Arrangements

#### Assessment Issues

Water planning frameworks are to provide for adaptive management of surface and groundwater systems in order to meet productive, environmental and other public benefit outcomes; to identify the environmental and other public benefit outcomes sought for water systems; and to develop and implement management practices and institutional arrangements that will achieve those outcomes.

To this end, the Northern Territory has agreed to establish effective and efficient management and institutional arrangements under the National Water Initiative.

For the 2005 National Competition Policy assessment, the Commission is looking for the Northern Territory to have progressed its implementation of effective and efficient management and institutional arrangements to ensure the achievement of environmental outcomes.

The Commission is also looking for the Northern Territory to describe the public education and consultation activities undertaken in relation to the integrated management of environmental water.

#### Effective and Efficient Management and Institutional Arrangements

The Northern Territory manages its water resources through a regulatory framework that includes the *Water Act 2004*. The *Water Act 2004* guides all aspects of water resource use and management, including how water resources are investigated, allocated and protected in the Northern Territory.

Under the *Water Act 2004*, a water allocation plan covering both surface water and groundwater may be developed for a declared water control district for the purpose of managing water extraction at sustainable levels. The statutory purpose of a water allocation plan is to ensure that consumptive use does not exceed the sustainable water resource yield after accounting for the environmental allocation.

The *Water Act 2004* has required that water allocation plans always include an environmental water allocation since 2000. The purpose of this allocation is to provide a water regime that is consistent with ARMCANZ/ANZECC National Principles for the Provision of Water for Ecosystems.

The organisational arrangements for managing the environmental water allocation are best considered in terms of the territory's overall water management arrangements, which include:

- the Minister for Natural Resources, Environment and Heritage and the Controller of Water Resources are the regulatory consent authorities under the *Water Act 2004*
- the Controller of Water Resources is an independent appointment by the minister and currently operates within the Department of Natural Resources, Environment and the Arts, and
- the Department of Natural Resources, Environment and the Arts delivers integrated natural resource management and biodiversity conservation services for all of the Northern Territory, including integrated surface and groundwater scientific, technical, regulatory, planning and policy resources. All water-related licensing and permit administration and compliance monitoring services are provided through its Natural Resource Management Division, all water resource investigations are conducted by its Natural Systems Division and water allocation planning and policy development is provided by its Policy and Planning Division.

Community and industry stakeholder-based steering committees assist the department with preparation of regional water resources strategies for ultimate declaration as statutory water allocation plans by:

- reviewing draft water resources strategies, and
- participating in the determination of water allocations and beneficial uses.

The community steering committee also assists by recommending membership for a ministerially-appointed water advisory committee under the *Water Act 2004* to oversee implementation of the final water resources strategy. Additional functions of the water advisory committee typically include:

- overseeing, reviewing and developing the workplan that supports implementation of a water resources strategy, along with the Department of Natural Resources, Environment and the Arts, and other relevant agencies
- representing the interests of the community throughout the lifespan of a water resources strategy
- advising the Controller of Water Resources as to the effectiveness of a water allocation plan in maximising economic and social benefits within ecological restraints, and
- promoting, reviewing and updating a water resources strategy, in accordance with the five year review process.

Other features of environmental water management that are significant in the Northern Territory are discussed below.

#### *Shared Resources between Jurisdictions*

In terms of joint arrangements between jurisdictions, the Northern Territory is signatory to the Lake Eyre Basin Intergovernmental Agreement. This agreement is to provide for sustainable management of the water and related natural resources associated with cross-border river systems in the Lake Eyre Basin to avoid downstream impacts on associated environmental, economic and social values.

In addition, the Northern Territory is represented on the Great Artesian Basin Coordinating Committee. The primary role of this committee is to provide advice from community organisations and agencies to state, territory and Australian government ministers on efficient, effective and sustainable whole-of-basin resource management and coordination activities.

#### *Interconnected Surface and Groundwater Systems*

The *Water Act 2004* does not explicitly identify the need for integrated management of groundwater and surface water in the Northern Territory. Nevertheless, integrated groundwater and surface water management has been delivered under this Act (and its predecessors) through a single water resource agency in the Northern Territory since 1995.

Currently, the Northern Territory Government is developing groundwater models for Darwin Rural and Katherine–Daly areas that will predict the impact of developments on interactions between surface water and groundwater. It is

intended that these models will be complete by the end of 2006. They will then be incorporated into the concurrent development of water allocation plans to ensure the management of environmental water provisions for each region.

#### *Audit, Review and Public Reporting Procedures*

Under the *Water Act 2004*, the minister must ensure that a water allocation plan is reviewed at least every five years. For example, the draft Alice Springs Water Resources Strategy provides for an adaptive framework to amend water allocations in light of new findings and improved understanding every five years.

The Commission understands that as part of the five year review, the Alice Springs Water Advisory Committee will consult with the Department of Natural Resources, Environment and the Arts, and stakeholders to ensure achievements of the water resource outcomes (including environmental outcomes) in the water allocation plan are being met.

The *Ti-Tree Region Water Resource Strategy* is the Northern Territory's only completed statutory water allocation plan. It has an associated workplan for improving knowledge, information and management of the water resources in the water control district. The workplan includes, for example, monitoring and reporting on hydrological parameters, investigating and determining the environmental and cultural significance of water resources. The Northern Territory intends to use this information to update and extend its water allocation strategy.

#### *Environmental water trading*

The *Water Act 2004* does not provide for trade between consumptive and non-consumptive water uses in order to prevent environmental and cultural water allocations being traded to water irrigators and other water users.

#### *High Conservation Value Rivers, Reaches and Groundwater Areas*

The Northern Territory's *Water Act 2004* does not contain provisions for identifying and managing high conservation value surface or groundwater, other than the capacity for beneficial use declarations for water allocation and water quality planning purposes. However, the Northern Territory Government is understood to be currently developing a new Living Rivers Program to conserve the values of its

iconic rivers. The initial focus for this work will be provided through the new institutional arrangements soon to be introduced for the Daly River region and it is intended that further details with regard to the Living Rivers Program should be put to the Northern Territory Government early in 2007.

#### *Public Education and Consultation Activities*

Public consultation and education relating to the integrated management of environmental water in the Northern Territory is delivered through the regional water resource strategy processes (which includes water allocation planning). These processes operate through community steering committees, comprising government and relevant community interests (irrigators, other landholders, and Indigenous groups).

Community steering committees are responsible for consulting with the general public and specific interest groups on water allocation planning issues for the region under consideration. The Committees are also responsible for reporting to government on the outcomes of general public consultation.

Consultation mechanisms used by community steering committees include:

- meeting with key stakeholder groups
- public meetings to discuss current knowledge, current use, demand forecast, draft allocation policy, implementation and role of a water advisory committee
- public exhibition of draft water resources strategies and invited public submissions, and
- making copies of presentations to stakeholders and the public available on the Internet.

This process is initiated by release of a draft water allocation plan prepared by the Department of Natural Resources, Environment and the Arts, followed by review and revision of the draft plan in response to feedback received from the steering committee.

Upon the release of a draft water allocation plan, public information sessions are held to inform the community on the planning process and the issues relating to the particular region. This is followed by a submissions period for public comment on the draft plan.

## Discussion and Assessment

### Effective and Efficient Management and Institutional Arrangements

The Northern Territory's current legislative and administrative procedures include arrangements for managing water for environmental and public benefit outcomes. The Northern Territory's *Water Act 2004* requires preparation of a water allocation plan for all declared water control districts, and these plans must include an environmental water allocation.

The *Water Act 2004* gives the minister and the Controller of Water Resources a great deal of discretion in how they determine, manage, administer and publicly report environmental water allocations. Despite this discretion, it is clear to the Commission that the Northern Territory is currently demonstrating some features of effective environmental water management. For example:

- while the *Water Act 2004* does not specify the order for determining water allocations, the water allocation plans currently being developed in the territory prescribe non-consumptive demands (environmental and cultural uses) prior to determining the consumptive pool and consumptive allocations
- all of the Northern Territory's water allocation plans (both statutory and draft) incorporate activities for monitoring their effectiveness at delivering environmental outcomes, and adaptively managing environmental water allocations based on new knowledge.

The Northern Territory's intention to review its *Water Act 2004* is an opportunity for the government to formalise a number of its institutional arrangements for managing water for environmental and other public benefit outcomes, including:

- prioritisation of water allocations for environment and public benefit outcomes ahead of consumptive uses
- identification and management of high conservation value rivers
- management of significantly interconnected groundwater and surface water systems, and
- public reporting of the achievement of environmental outcomes and the adequacy of environmental water provisions within water allocation plans.

On the basis of the above discussion, the Commission considers that the Northern Territory has made satisfactory progress towards meeting its COAG commitment in this area.

### Public Education and Consultation

The Commission considers that the Northern Territory has adequately described its mechanisms for educating and consulting the public in relation to the integrated management of water for environmental and other public benefit outcomes. The water resource planning process primarily incorporates public education and consultation through the establishment of community steering committees and water advisory committees.

As such, the Commission considers that the Northern Territory has made satisfactory progress towards meeting its COAG commitment in this area.

## 9.6 Water Resource Accounting

### 9.6.1 Benchmarking of Accounting Systems

#### Assessment Issue

The Commission is looking for the Northern Territory to be actively engaged in the national benchmarking of jurisdictional water accounting systems by June 2005, to allow for the development of a national framework for comparison of water accounting systems to encourage continuous improvement leading to the adoption of best practice.

The Northern Territory is involved in a national process to benchmark water accounting systems. Through this process, the Northern Territory has committed to provide full access to its existing water accounting and entitlement registry systems and to other relevant water databases.

## Discussion and Assessment

The Commission considers that the Northern Territory is satisfactorily progressing its COAG commitment to benchmark existing water accounting systems.

## 9.6.2 Consolidated Water Accounts

### Assessment Issue

The Northern Territory is to identify situations where close interaction between groundwater aquifers and streamflow exist by the end of 2005, to support the integration of accounting for groundwater and surface water use.

**The Northern Territory advises that it has identified many instances of close interaction between groundwater aquifers and streamflows.**

**The Daly River Basin is the key region of current interest. Dry season streamflow in the major streams of this region (Daly, Flora and Katherine rivers) is maintained through natural baseflow discharges from two major aquifer systems. The Howard River region, in the Darwin rural hinterland, is also a key region of current interest. Natural baseflow discharges from the region's major aquifer is important to aquatic ecosystems in both the Howard River catchment and the adjacent Adelaide River catchment.**

The Northern Territory has commenced modelling of the regional inter-relationships between river flows and groundwater discharges and the predicted effects of increasing groundwater extraction for consumptive use in both of these regions of interest. This modelling work will be used for the design of improvements to the integrated monitoring of water use, river flows and quality and groundwater levels, discharges and quality. It is intended that this work will be completed towards the end of 2006, with assistance through the Australian Government Water Fund.

The interaction and inter-dependency of the Roper River on major limestone aquifer systems is also identified by the Northern Territory as an emerging area of interest, in a similar manner to the interests being investigated in the Daly and Darwin regions.

### Discussion and Assessment

The Commission notes that Northern Territory has identified instances of significant interaction between groundwater and surface water within the Territory. The Commission also notes that the Northern Territory is engaged in a national process to develop accounting system standards and guidelines.

## 9.6.3 Environmental Water Accounting

### Assessment Issue

The Commission is looking for the Northern Territory to have commenced the development of:

- a compatible register of new and existing environmental water, showing all relevant details of source, location, volume, security, use, environmental outcomes sought, and type, and
- annual reporting arrangements to include reporting on the environmental water rules, whether or not they were activated in a particular year, the extent to which rules were implemented and the overall effectiveness of the use of resources in the context of the environmental and other public benefit outcomes sought and achieved.

**The Northern Territory advises that it has not yet commenced the development of an environmental water register and associated reporting arrangements.**

**The Northern Territory is engaged in the national process to develop and adopt characteristics for compatible environmental water registers and principles for environmental water accounting.**

### Discussion and Assessment

The Commission notes that the Northern Territory is engaged in a process to develop environmental water accounting principles and reporting arrangements. To meet its COAG commitment with regard to environmental water accounting, the Northern Territory will need to adopt these arrangements.

## 9.6.4 Reporting

### Assessment Issue

The Commission expects the Northern Territory to be engaged in a process to develop national guidelines covering the application, scale, detail and frequency for open reporting, addressing:

- metered water use and associated compliance and enforcement actions
- trade outcomes

- environmental water releases and management actions, and
- availability of water access entitlements against the rules for availability and use.

**The Northern Territory is currently participating in a national process to develop national water accounting and reporting guidelines. The Northern Territory will then develop reporting arrangements in line with these guidelines.**

## Discussion and Assessment

**The Commission considers that the Northern Territory is satisfactorily progressing its COAG commitment to developing national guidelines for reporting water use and management information.**

## 9.7 Urban Water

### 9.7.1 Demand Management

#### Assessment Issues

The Commission will assess:

- whether the Northern Territory has implemented the Water Efficiency Labelling and Standards Scheme, including mandatory labelling and minimum standards for agreed appliances, and are undertaking compliance monitoring and
- the extent to which the implementation of the Water Efficiency Labelling and Standards Scheme has been actively communicated to consumers.

The Commission will also look for the Northern Territory to report on progress with the review of water restrictions and the implementation of management responses to supply and discharge system losses.

#### Implementation of the National Water Efficiency Labelling and Standards Scheme

**The Northern Territory is currently in the process of seeking approval to draft legislation for government consideration to implement the Water Efficiency Labelling and Standards Scheme. In addition, the Northern Territory's Minister for Natural Resources, Environment and Heritage is seeking approval to sign the intergovernmental agreement that will**

**provide in principle support for the implementation of the scheme. The Northern Territory anticipates that legislation regarding the Water Efficiency Labelling and Standards Scheme will be finalised by early 2006.**

**The intergovernmental agreement for the Water Efficiency Labelling and Standards Scheme intergovernmental agreement provides for jurisdictions to undertake their own compliance and communication of the scheme. It is not anticipated at this stage that the territory will adopt this approach as it believes that the Australian Government's Water Efficiency Labelling and Standards Scheme communication and compliance measures will be sufficiently targeted, and address the requirements of the scheme. The Northern Territory will, however, provide support and promotion of the scheme by distributing Australian Government materials at local events, and other appropriate forums.**

#### Review of Water Restrictions and Implementation of Management Responses

**In 2003, the Power and Water Corporation developed a Water Restrictions Policy – Schedule and Management – Darwin. The framework of the policy includes the importance of conserving water in circumstances such as low rainfall, drought or emergency situations, public awareness and communication.**

**Power and Water has had an active role in Alice Springs since 1990 in various community based forums for water use efficiency. In addition, the Power and Water Corporation has developed a water use efficiency programme that, while intended for implementation in Darwin, could be adapted for the whole of the Northern Territory.**

**No permanent water restrictions have been applied in the Northern Territory. As no restrictions have been adopted, no impact assessments have been undertaken. However, the Power and Water Corporation commissioned the Institute of Sustainable Futures (through the University of Technology, Sydney) to undertake a water end use study in Alice Springs. This is an ongoing project, which incorporates strategies for community engagement.**

### Water Supply and Discharge System Losses

The water balance model used in the Northern Territory is the first step in the assessment of volumes of non-revenue water and the management of losses in potable water distribution systems. The infrastructure leakage index measures how effectively a utility is managing real losses under the current operating pressure regime, and is represented by the ratio of the actual estimated real losses, divided by the unavoidable annual real losses. As a regulatory requirement under the *Water Supply and Sewerage Act 2001*, the Power and Water Corporation submits asset management plans annually to the Utilities Commission. These plans include the infrastructure leakage index and non-revenue water as performance indicators for water losses.

### Discussion and Assessment

The Commission considers that the Northern Territory has not met its COAG commitments in relation to the national Water Efficiency Labelling and Standards Scheme as the legislation to implement the scheme has not been passed. The review of water restrictions and the implementation of management responses to supply and discharge system losses are ongoing actions.

### 9.7.2 Innovation and Capacity Building to Create Water Sensitive Australian Cities

#### Assessment Issues

The Commission will assess whether the Northern Territory has:

- developed and applied national health and environmental guidelines for recycled water and stormwater
- commenced a process to evaluate existing 'icon' water sensitive urban developments to identify knowledge gaps and lessons for future strategically located developments and
- undertaken adequate public consultation and education as part of these commitments.

### Recycled Water and Stormwater Guidelines

Planning and construction of infrastructure to recycle treated effluent is well advanced in the Alice Springs area. Environmental assessment has been completed for storing treated effluent in a groundwater system south of Alice Springs, with a view to using it for horticultural irrigation on the grounds of the Arid Zone Research Institute. There are some options for potable water displacement on school ovals and other grassed areas. It is not currently intended to use this treated effluent in urban parts of Alice Springs.

It has long been recognised that stormwater in Alice Springs has the useful function of recharging local groundwater systems, which are then available for (generally non-potable) water usage. Alice Springs sources approximately ten per cent of its total water need from the 'town basin' aquifer, which is recharged by the Todd River and by flow from stormwater originating over the town area. A key factor for stormwater management is ensuring that the quality of water recharging this aquifer is suitable for irrigation purposes. The Department of Natural Resources, Environment and the Arts is currently scoping a proposed study of Alice Springs' urban salinity generally. The study is expected to commence in 2006.

In October 2004 the former Minister for Lands and Planning approved a consultation and consultancy approach to developing Ecologically Sustainable Development Guidelines for Hot Arid Residential Developments, which is in the early stages of implementation.

The next significant new urban subdivision area in Alice Springs will be Mt John Valley. A stormwater consultancy has been commissioned to examine (amongst other things) options for water detention within the subdivision; water re-use options including grey water; and subsurface water collection and storage (eliminating evaporation).

The outcomes of this study are expected to be finalised by the end of 2005. The dominant education component stemming from this study will be engagement with Alice Springs Town Council to assist them in aligning their stormwater standards with the recommendations of this report.



## Discussion and Assessment

The Commission notes that the Northern Territory has a number of initiatives in place to encourage and facilitate the adoption of water sensitive initiatives. The Commission considers that the Northern Territory has made limited progress towards meeting its COAG commitments in the innovation and capacity building for water sensitive cities area.

### 9.8 Community Partnership and Adjustment

#### Assessment Issues

The Commission will be examining the Northern Territory's public consultation and education arrangements for consistency with its COAG obligations, for all aspects of the COAG water reform agenda. Particular assessment items are identified under each relevant section of this assessment framework.

With regard to addressing adjustment issues, the Commission will be looking for the Northern Territory to demonstrate its commitment to close engagement with affected parties on possible responses, including consideration of, at least, the factors outlined in paragraph 97(i) of the National Water Initiative.

#### Public consultation and education arrangements

In general, the Northern Territory seeks to incorporate community engagement in issues management, and particularly reform agendas. Under the *Community Engagement Framework* (OCPE, 2004), announced in March 2005, the Chief Minister outlined the active steps the Northern Territory Government is taking to both facilitate public education on issues, and actively involve the public in policy dialogue and decision making.

The Northern Territory has consulted publicly on a range of water reform matters. Previous sections of this assessment detail the Northern Territory's consultation and education initiatives in relation to water resource planning, water pricing, environmental water and urban water. In summary:

- The Daly River region provides a demonstration of the Northern Territory's approach to consultative arrangements for water resource planning. During late

2003, the Daly Region Community Reference Group was established to advise government on an Integrated Regional Land Use Plan (including a water allocation plan). The group contained members from community, pastoral, landcare, agricultural, horticultural, fisheries, indigenous and tourism groups, as well as local and territory government stakeholders. The Northern Territory noted that the reference group held extensive public hearings and meetings in 2003 and 2004 and gave the public the opportunity to provide verbal or written submissions. The records of the public hearings and submissions were made publicly available on the Daly Region Community Reference Group's webpage<sup>1</sup>. In addition, the group encourages the coordination and publication of outcomes from research activities relating to the sustainable management of the Daly River region to affect community capacity building.

- The Northern Territory advised the Commission that it has adopted a similar approach in community consultation and engagement, including public education, through the Plan of Management for Darwin Harbour (DHAC, 2003) and the current Water Sensitive Urban Design projects in Alice Springs.

#### Adjustment Issues

The Northern Territory advised the Commission that it does not currently impose water restrictions and as such there have never been any adjustment issues. Even so, the Northern Territory reported that it is committed to facilitating community engagement for any future water management practice changes, which may include addressing adjustment issues resulting from supply restriction practices.

## Discussion and Assessment

The Northern Territory has put substantial effort into developing appropriate and effective consultative and community participation arrangements in recent years. These arrangements have been substantially modified since the initial water allocation plan for the Ti-Tree region was developed, in response to criticism received from some interest groups.

<sup>1</sup> The discussion paper for the development of the water allocation plan can be found at <http://www.nreta.nt.gov.au/naturalresources/plans/dalyregion/index.html>

The Commission recognises that the Northern Territory has not needed to address adjustment issues resulting from reductions in water access entitlements to date.

The Commission considers that the Northern Territory has made significant progress towards meeting its COAG commitments in this area.

## 9.9 National Water Quality Management Strategy

### Assessment Issues

The Commission is looking for the Northern Territory to demonstrate continued and active implementation of the National Water Quality Management Strategy (NWQMS). In undertaking this assessment, the Commission will be guided by the expectations identified in the 2001 paper on implementation and the approach taken in previous National Competition Policy assessments.

The Commission will consider the extent to which the implementation of other water reform commitments recognises and gives effect to the NWQMS.

The 2005 National Competition Policy assessment will consider the Northern Territory's implementation of guidelines that have been finalised since the last assessment.

The Commission also expects the Northern Territory to report on its 2003 drinking water monitoring programme review and implementation of any changes to its drinking water monitoring programme as a result of the review.

### Implementation

In 2001 the Northern Territory agreed to a two-yearly review of its implementation of NWQMS guidelines and the 2003 National Competition Policy assessment (NCC, 2003a) examined the Northern Territory's progress during that timeframe. The 2003 National Competition Policy assessment found that the Northern Territory was making satisfactory progress in implementing policies that reflect the NWQMS framework.

The Northern Territory has continued to implement mechanisms that account for the NWQMS framework since the 2003 National Competition Policy assessment; principally through Beneficial Use declarations, and industry codes of practice and environmental guidelines.

### *Beneficial Use Declarations*

Under the *Water Act 2004*, water quality in the Northern Territory is currently protected by the adoption of community-based beneficial use declarations and environmental values for each water body. Declaring beneficial uses provides legal recognition of the values of a water resource and determines how water may be used, managed and protected. This beneficial use framework is identical to the environmental values framework of the NWQMS.

Water quality monitoring—to assess whether water quality values and beneficial uses are being maintained—is undertaken in the Northern Territory as a partnership between industry, government and the community.

Iparpa Swamp is one example of an area in the Northern Territory that has declared beneficial uses under the *Water Act 2004*. A community consultation process identified environmental and cultural use as priority values of the area. A programme to rehabilitate the swamp, and protect its environmental and cultural beneficial uses, was subsequently established (DIPE, 2003).

### *Industry Codes of Practice and Environmental Guidelines*

Point-source pollution produced by large industries is regulated by waste discharge licences that set discharge limits, and establish mixing zones and environmental monitoring programs to verify the discharge limits are being met. Draft environmental guidelines for waste discharge management are available on request to the Environmental Protection Agency to provide a framework for risk management, mixing zone management and environmental monitoring. Diffuse source pollution is managed through industry codes of practice and environmental guidelines.

### *Water Reform Commitments*

The *Water Act 2004* provides the primary statute for all matters associated with the sustainable use and protection of water quality of surface water resources and groundwater resources. The Act applies the beneficial use framework discussed above to the management of both surface water and groundwater. For example, water resources are allocated to consumptive water users according to the beneficial use categories. A beneficial use must first be declared prior to any allocation being determined for

any particular use. An entitlement to extract water for any particular purpose is then provided through a water extraction licence, which is issued for particular beneficial uses.

#### Implementation of NWQMS Guidelines

The Northern Territory contributed to the revised *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (ANZECC & ARMCANZ, 2000a), the *Guidelines for Sewerage Systems Sludge (Biosolids) Management and Guidelines for Sewerage Systems Overflows*. The Northern Territory also contributed to proposed revisions to the *Australian Drinking Water Guidelines* (NHMRC & NRMCC, 2004), including the use of the Katherine water supply in a pilot project.

Regulatory agencies in the Northern Territory recognise and use the NWQMS guidelines on point and diffuse source pollution where their use is considered appropriate.

#### Drinking Water Monitoring Programme

The Power and Water Corporation reviews its Drinking Water Quality Monitoring Program continuously in conjunction with the Department of Health and Community Services. The corporation publishes the review results in its annual Water Quality Reports, which are publicly available on the corporation's website.

Recent modifications to the Drinking Water Quality Monitoring Program have included:

- introducing additional sampling programs in Tennant Creek to enhance the ability to identify potential problems
- introducing additional sampling locations in Alice Springs to incorporate system expansion, and
- reducing the frequency of radiological and pesticide sampling to account for previous results.

The Power and Water Corporation (in conjunction with the Department of Health and Community Services) will be undertaking a major review of the Drinking Water Quality Monitoring Program during 2006, with regard to newly released National Health and Medical Research Council guidelines. It is anticipated that this review will include an expansion of the ongoing monitoring programme to include

regular sampling for the amoeba *Naegleria fowleri*, which was detected in the Darwin water supply system earlier in 2005.

#### Discussion and Assessment

The Northern Territory has demonstrated continued implementation of the NWQMS via beneficial use declarations, and industry codes of practice and environmental guidelines.

The Commission considers that the Northern Territory has continued to recognise and give affect to the NWQMS through its water planning processes. In addition, it has also continued to review its Drinking Water Quality Program and administer routine modifications to the programme as necessary.

The Commission considers that the Northern Territory has made satisfactory progress towards meeting its COAG commitment in this area.



# 10

## MURRAY-DARLING BASIN COMMISSION



## MURRAY-DARLING BASIN COMMISSION

### 10.1 Water planning and addressing currently overallocated and/or overused systems

#### Assessment Issues

The Commission will look for the Murray-Darling Basin Commission to provide information on:

- the implementation of the Cap on water diversions and jurisdictions' compliance with the Cap
- progress with the implementation of the 'First Step' of The Living Murray initiative and any initial outcomes, and
- the implementation and progress of other measures aimed at improving the environmental health of the Murray-Darling system.

#### Cap Implementation and Compliance

In June 1995, in response to an audit of water use in the Murray-Darling Basin, the Murray-Darling Basin Ministerial Council agreed to cap water diversions within the Basin as an important step towards protecting the riverine environment. The management arrangements for the Cap, as outlined in Schedule F of the Murray-Darling Basin Agreement (MDBC, 1992), were agreed by the Murray-Darling Basin Ministerial Council in 2000. Each year, an Independent Audit Group assesses compliance with the Cap, by comparing the annual diversion in each river valley with the diversion target for that year.

Generally, for the Murray-Darling Basin states where a Cap has been agreed, the Cap in any year is the volume of water that would have been diverted with the infrastructure (such as pumps, dams, channels, and areas developed for irrigation) and management rules that existed in 1993–94, assuming similar climatic and hydrologic conditions to those experienced in the year in question. The Cap itself does not attempt to reduce diversions, but merely prevents them from increasing. The Cap does not apply to some extractions (such as groundwater) or water interception activities (such as farm dams and reforestation).

A permanent Cap has been in place in catchments in New South Wales (except the Border Rivers), Victoria and South Australia since 1 July 1997. The Cap in the Australian Capital Territory is yet to be agreed too. The Cap in Queensland (as

well as the New South Wales Border Rivers catchments) will be determined and implemented following completion of the water planning process in all Queensland Murray-Darling Basin catchments, which is currently scheduled for mid-2007.

The Cap is being managed based on designated river valleys, known as Cap valleys, in accordance with a set of formal rules in the 1992 Murray-Darling Basin Agreement. An independent audit group conducts an annual audit of the diversion in every designated Cap valley of the basin in October, comparing observed diversion against annual targets determined by the valley Cap models.

In the case of a breach of the Cap in any Cap valley, the relevant state government is required to report to the Murray-Darling Basin Ministerial Council on:

- the reasons the breach occurred
- the actions taken, or proposed to be taken, by the state to ensure that diversions are brought back into balance with the Cap, and
- the period within which diversions will be brought back into balance with the Cap.

Annual reporting on Cap implementation is carried out through the independent audit group report and the Murray-Darling Basin Commission water audit and monitoring report.

At the end of 2003–04, all designated Cap valleys, where a Cap is in place, were within the long-term Cap that was agreed by the council during 2003–04, except for the Barwon-Darling – Lower Darling Cap valley in New South Wales, which was declared in breach of Cap in 2003–04. Consequently, as required under the 1992 Murray-Darling Basin Agreement, New South Wales made a statement at the September 2005 Murray-Darling Basin Ministerial Council meeting on proposed remedial actions to bring the Barwon-Darling – Lower Darling valley within the Cap.

The Murray-Darling Basin Commission does not report on compliance performance for Queensland and the Australian Capital Territory because they have not yet implemented a Cap.

### Implementing the Living Murray Initiative ‘First Step’ and any Initial Outcomes

In 2002, the Murray-Darling Basin Commission established The Living Murray Initiative in response to evidence that the Murray River system is degraded. Following further investigation of the economic, environmental and social costs and benefits of returning water to the river systems, the Murray-Darling Basin Ministerial Council announced its ‘First Step’ decision in 2003. This decision focuses on maximising the environmental benefits for six significant ecological assets in the Murray system and will be achieved by returning (up to) an average of 500 gigalitres per year to the river. Governments have acknowledged that this decision is the first stage of a longer process to restore the environmental health of the Murray River. They have committed to further actions based on their experience with implementing the ‘First Step’.

The *Living Murray Business Plan* (MDBC, 2005a) was agreed by the Murray-Darling Basin Ministerial Council in November 2004 and activated in March 2005.

The ‘First Step’ decision for the Living Murray focuses on maximising environmental benefits for six significant ecological assets along the Murray. These are:

- Barmah-Millewa Forest
- Gunbower and Koondrook-Perricoota Forests
- Hattah Lakes
- Chowilla Floodplain (including Lindsay-Wallpolla)
- Murray Mouth, Coorong and Lower Lakes, and
- River Murray Channel.

The ‘First Step’ decision included input from communities through meetings, submissions, The Living Murray Community Reference Panel, the Community Advisory Committee to the Murray-Darling Basin Ministerial Council, and an Indigenous consultation process undertaken with the Murray Lower Darling Indigenous groups.

The progress of Murray-Darling Basin Commission activities that relate to implementing the ‘First Step’ decision is discussed below.

### The *Living Murray Business Plan*

A business plan for The Living Murray Initiative is required under the 2004 Intergovernmental Agreement on Addressing Water Overallocation and Achieving Environmental Objectives in the Murray-Darling Basin (COAG, 2004b).

The Murray-Darling Basin Ministerial Council activated The *Living Murray Business Plan* in April 2005. The plan describes how the Murray-Darling Basin Commission will implement the actions and milestones in the 2004 intergovernmental agreement, including consultation processes for those impacted by activities under the business plan.

The Murray-Darling Basin Commission advised that options for water recovery in The Living Murray Initiative that are being considered and progressed, in line with Clause 79 (ii) of the National Water Initiative (COAG, 2004a), include:

- investment in more efficient water infrastructure
- purchase of water on the market, by tender or other market based mechanisms
- investment in more efficient water management practices, including measurement, or
- investment in behavioural change to reduce urban water consumption (to a lesser extent in the context of the Living Murray).

An Eligible Measures Register has been developed, which includes for each water recovery measure, a summary of information regarding consultation, social impacts, economic impacts, cost of equivalent water products in the market, water quality outcomes (including salinity), and the contribution of the measure to the environment.

### *Water Recovery*

There are three main streams of activity currently underway under The Living Murray Water Recovery Program. These are being overseen and guided by the project assessment group of the Murray-Darling Basin Commission. The main activities are:

- providing technical support with the implementation of four initial water recovery packages in accordance with The *Living Murray Business Plan*
- supporting the development of potential new water recovery packages, and

- investigating the potential for water recovery by reducing river and storage losses along the River Murray, Edward River and lower Darling River systems.

On 26 November 2004, the Murray-Darling Basin Ministerial Council agreed in principle to the implementation of an initial four water recovery packages, which will recover 240 gigalitres at a cost of \$179 million. This is nearly half the water to be recovered in the 'First Step' decision, costing about 36 per cent of the \$500 million that will be invested through The Living Murray Initiative. Investment plans are currently under development. The four water recovery packages are:

- Goulburn-Murray Water Recovery Package, which will recover 145 gigalitres of water at a cost of \$93 million
- Lake Mokoan Water Recovery Package, which will recover 24 gigalitres of water at a cost of \$13.7 million
- New South Wales Water Recovery Proposal A, which will recover 9 gigalitres of water at a cost of \$8.9 million through acquisition of Innovative Water Products, and
- New South Wales Water Recovery Proposal B, which will recover 62 gigalitres of water at a cost of \$63.25 million through infrastructure improvement works such as pipelines.

The Murray-Darling Basin Ministerial Council has invested \$1 million to undertake feasibility assessments of infrastructure improvement projects for water recovery. Many of these projects aim to reduce water losses from evaporation and seepage in irrigation districts, or evaporative losses from frequently inundated wetlands connected to weir pools along the Murray River. Nine feasibility assessments have been initiated in New South Wales, Victoria and South Australia.

#### *The Environmental Works and Measures Program*

In 2004–05, the Environmental Works and Measures Program moved into its second year of operation, with 31 projects (including investigations) implemented across the six significant ecological assets, and other complementary investigations and actions. The Murray-Darling Basin Commission stated that by June 2005, some \$8.5 million was expended on a wide range of activities. Reported key achievements for the environmental works and measures include:

- Gunbower, Koondrook-Perricoota Forests
  - approval to proceed to construction for Stage I of the Gunbower Environmental Flow Management project, including construction of the Little Gunbower Creek and Barham Cut regulators, refurbishment of the Shillinglaws regulator and removal of Wattles regulator.
- Chowilla (including Lindsay-Wallpolla) Floodplain
  - approval to proceed to construction for Stage I of the Improved Flow Management of the Lindsay-Wallpolla System project, including the construction of regulators for Horseshoe and Webster's Lagoons and Lake Walla Walla
  - watering of severely stressed River Red Gums on the Lindsay Wallpolla Floodplain, at Hattah Lakes, and on the Chowilla Floodplain including at Woolshed Creek, and
  - approval to acquire two sets of mobile pumping equipment to be utilised for future Red Gum watering activities on the Chowilla Floodplain.
- Murray Mouth, Coorong & Lower Lakes
  - installation of 24 automated gates on barrages to provide greater operational flexibility and control of water movement and fish passage between the Lower Lakes and the Coorong estuary.
- River Murray Channel
  - approval to construct a trial refuge habitat to investigate the feasibility of improving the growth rate and survival of native fish
  - construction of new fishways, and
  - approval to proceed to construction of the Packer's Crossing regulator on the Darling Anabranch.
- Other complementary investigations and actions include:
  - completion of the Adaptive Management Project with a handbook of recommended methods for wetland and floodplain monitoring, which the Murray-Darling Basin Commission reported was due to be released in July 2005
  - completion of the terrain mapping of the Lower Murray and Darling Rivers project with the detailed

- guidelines for the acquisition of terrain mapping data, and
- identification of additional actions across six significant ecological assets totalling \$15.7 million for implementation by June 2006.

#### *Environmental Delivery*

The environmental delivery team coordinated the development of the Living Murray Environmental Watering Plan, finalised in November 2004. The plan meets the interim arrangements for environmental water management under the Intergovernmental Agreement on Addressing Water Overallocation and Achieving Environmental Objectives in the Murray-Darling Basin.

Under The *Living Murray Business Plan*, an environmental watering group has been formed and asset environmental management plans have been developed to guide water application at the significant ecological assets under the 'First Step' decision. These plans, submitted to the Murray-Darling Basin Ministerial Council on 30 August 2005 for approval, are for guiding environmental management across the river system in 2005–06.

The Murray-Darling Basin Commission environmental delivery team has progressed work with River Murray Water Production in identifying and contributing to the management of environmental watering opportunities across the Murray River System, for example, release of water from the Barrages, and flooding in Gulpa Creek wetlands.

Since the 2004 National Competition Policy assessment (NCC, 2004b), the *Inside Murray Flow Assessment Tool* website has been launched, which enables visitors to discover how the assessment tool works and view the scientific information on which it is based.

Other Measures for Improving the Environmental Health of the Murray-Darling system

The Murray-Darling Basin Commission has reported on the development and implementation, since the 2004 National Competition Policy assessment, of other strategies that aim to improve the health of the Murray-Darling Basin.

#### *Basin Salinity Management Strategy 2001–2015*

Salinity levels during 2004–05 were well below the Murray-

Darling Basin salinity target (below 800 EC for 95 per cent of the time at Morgan in South Australia), due to the low groundwater levels associated with the drought. In contrast, salinity levels in other areas were higher. In lakes Albert and Alexandrina, for example, a lack of flushing flows resulted in increased salinity levels. In addition, large volumes of salt continue to accumulate in the floodplains of the lower reaches of the river.

The Independent Audit Group for Salinity undertook its second audit during November 2004. It identified significant progress in:

- establishing baseline conditions
- setting end-of-valley targets
- accreditation of models to evaluate salt loads in streams
- developing approaches to evaluating the impacts of water trade, and
- establishing two Salinity Registers.

The Murray-Darling Basin Commission has developed a priority work plan in response to the Independent Audit Group for Salinity's findings. It has also commenced planning for the implementation of core elements of the Basin Salinity Management Strategy. It encompasses key implementation themes including assessment of irrigation impacts, salt interception works, instream salinity management, catchment planning and implementation and ensuring basin-wide accountability.

The *Basin Salinity Management Strategy Implementation Report 2003–04* (MDBC, 2004a) was endorsed by the Murray-Darling Basin Commission in March 2005. Additionally, the *Report of the Independent Audit Group for Salinity 2003–04* (MDBC, 2005b) and a non-technical summary brochure were publicly released in April 2005.

A salinity-modelling forum was held in April 2005. The main outcomes were to:

- establish confidence in the use of models in policy formulation
- highlight the need for access to data across jurisdictions and institutions, and
- communicate the benefits of modelling to regional catchment authorities.



The approval and construction of several joint salt interception schemes has progressed. The Murray-Darling Basin Commission has stated that the Pyramid Creek, Buronga and Bookpurnong Salt Interception Schemes were expected to be operational by end of September 2005. The Loxton Salt Interception Scheme has been approved and construction recently started.

#### *Sustainable Rivers Audit*

Through the Sustainable Rivers Audit, which began in July 2004, indicators and methods for river health assessment have been developed that are consistent across catchments (and jurisdictions) and will be used repeatedly over time.

The programme has initiated monitoring of three indicator themes across the Murray-Darling Basin during 2004–05. These are the field sampling for fish and invertebrates and modelling for hydrology. Data collection is undertaken across the Basin and then reported on using a standard set of indicators. Three further indicator themes remain to be developed: physical form, riparian vegetation and floodplain health.

The programme design of the Sustainable Rivers Audit has been finalised and governance structures put in place. Monitoring, using consistent methods, has begun across Queensland, New South Wales, Victoria, South Australia and the Australian Capital Territory. The first full year of monitoring was completed in June 2005, with some 500 sites across the Murray-Darling Basin sampled for macroinvertebrates and fish.

Four meetings of the Sustainable Rivers Audit Implementation Working Group were held during 2004–05. Information is being assembled for the first Sustainable Rivers Audit Implementation Report, to be prepared by December 2005.

Mapping of stream networks and site selection was completed for 16 of the 23 valleys in the Murray-Darling Basin. Technical reference groups have been established to support sampling for each current indicator theme and the three new themes under development over the next three years. A Communication Plan and a Program Evaluation Plan (covering conceptual development, risk management, programme design review and quality assurance) have also been developed.

#### *Native Fish Strategy*

Under the Native Fish Strategy for the Murray-Darling Basin, various programmes are underway to restore native fish communities in the Basin to 60 per cent of pre-European levels in the next fifty years.

Under the Sea to Hume Dam fish passage programme, since the 2004 National Competition Policy assessment fishways have been completed at Lock 7, Lock 9, and at Tauwichee Barrage. Investigative work continued on a number of innovative projects designed to improve the effectiveness and cost efficiency of future fishways.

Following a recommendation from the successful workshop on the management and conservation of Murray cod in June 2004, a Murray Cod Reference Group was formed to advise on key issues such as:

- the identity, size, structure and dynamics of Murray Cod populations
- the level of fishing catches from Murray Cod populations, and
- the adequacy of current management arrangements.

The Murray-Darling Basin Commission has continued to fund the development of 'daughterless carp' technology by the Pest Animal Control Cooperative Research Centre. Some additional projects under this programme also contribute to the overall focus on carp management.

#### *Information Dissemination*

Since the 2004 National Competition Policy assessment, the Murray-Darling Basin Commission has produced several communication products that support its strategies. Some key examples reported by the Murray-Darling Basin Commission are listed below.

During the last year, the Murray-Darling Basin Commission released the *Native Fish Strategy Annual Implementation Report 2003–04* (MDBC, 2005c). This reports on the first year of implementation of the Native Fish Strategy and provides a framework for reporting on progress at both state and Basin level. Several native fish publications were also developed to raise awareness on issues such as the role of large woody debris as fish habitat, fish tagging technology, and the concept of demonstration reaches.

Technical knowledge of riverine ecology was advanced through the Murray-Darling Freshwater Research Centre. This has enabled laboratories at Mildura, Albury and Goondiwindi to undertake projects to investigate the importance of river–floodplain interactions, environmental flows and the ecology of wetlands. One study completed during the year investigated the ecology of Menindee Lakes and their response to flooding, providing information for the management of these lake systems and resulting in a set of management guidelines for ephemeral deflation-basin lakes.

The National River Contaminants Program, in its final year of funding, produced a series of projects providing:

- predictions of the loss of biodiversity induced by increasing salinity
- improvements in the management and application of fertilisers
- measurements of endocrine-disrupting chemicals in river environments, and
- insights into sediment and nutrient fluxes following bushfires.

In addition to these projects, a study into physical and biological responses to flow continued at Narran Lakes, and a number of studies were also conducted into factors affecting communities and habitats of native fish.

The long-term River Murray Water Quality Monitoring Program underwent the third and final stage of a review. The *Review of the River Murray Water Quality Monitoring Program* (MDBC, 2005d) published the revised objectives of the programme in June 2005. New monitoring arrangements were introduced in July 2005. The programme provides important baseline information on the current status and trends in water quality in the Murray River, upon which all research and investigations relating to the river rely.

The production of the *Groundwater Status Report 1990–2000* (Ife and Skelt, 2004) information package has allowed target audiences, including state agency staff, regional hydrogeologists and catchment managers, to more easily access groundwater data from across the Murray-Darling Basin. The information package allows users to access Murray-Darling Basin groundwater in a spatial context (through GIS), and encourages users to access different levels of detail according to their information requirements.

Demonstration workshops for this information package have been held across the basin.

Actions have been undertaken to disseminate information on the Irrigated Regions Program, including the collation of project summaries and the production of theme reports that are intended to communicate the key findings of work undertaken by the programme to a variety of audiences, including the Murray-Darling Basin Commission, the Murray-Darling Basin Ministerial Council, and others involved in water management and policy development. Theme reports include:

- farming systems and best management practices
- channel seepage
- groundwater use and management, and
- environmental stewardship.

The Murray-Darling Basin Commission has been a major partner of the National Dryland Salinity Program, and has reported continued involvement in the programme's year of enhanced communication, through the distribution and promotion of its integrated communication products, including a resource directory and action manual for catchment managers, and an interactive CD-ROM.

## Discussion and Assessment

For the 2004 National Competition Policy assessment, the National Competition Council found that The Living Murray initiative and the 'First Step' decision satisfactorily address COAG commitment relating to the allocation of water to the environment.

For this 2005 National Competition Policy assessment, the Murray-Darling Basin Commission has demonstrated progress on the implementation of the Cap on water diversions and jurisdictions' compliance with the Cap; the implementation of the 'First Step' of The Living Murray initiative and any initial outcomes; and the implementation of other measures aimed at improving the environmental health of the Murray-Darling system.

The Murray-Darling Basin Commission has expressed elsewhere its concern over the time being taken to reach agreement on a Cap for Queensland and the Australian Capital Territory, and to establish a Cap in Murray-Darling Basin catchments.

## 10.2 Water markets and Trading

### Assessment Issues

For this assessment, the Murray-Darling Basin Commission is to report on:

- progress with the interstate trading pilot project
- current arrangements to support the extension of interstate trade beyond the pilot project, including exchange rates, tagging, approvals systems, registers and environmental controls, and
- progress in supporting the removal of barriers to interstate trade, including its work on access and exit fees for trade out of irrigation areas.

The Murray-Darling Basin Commission has a role in the oversight of implementation of the interstate trading provisions of the 1992 Murray-Darling Basin Agreement. It also helps coordinate interstate trading activities in the Basin, including management of the interstate trading pilot project and developing arrangements to support the expansion of interstate trade.

### Interstate Trade Pilot Project

The Murray-Darling Basin Commission established a pilot project for permanent interstate water trading between New South Wales, Victoria and South Australia in 1998. The trial is being conducted from Nyah to the Murray Mouth.

The primary significance of the trial has been for horticulture and viticulture that has expanded rapidly in the Mallee regions of New South Wales, Victoria and South Australia over recent years. While around 23 gigalitres of water have been permanently traded since the commencement of the project, this volume is less than one per cent of the water used in the pilot area. This represented only a very small proportion of the water market in the region compared with the volumes available for interstate temporary trade and intrastate permanent and temporary trade.

The pilot project has provided an opportunity to test operations and procedures for interstate water trade in the southern Murray-Darling Basin, such as the development of trading rules, environmental clearance procedures and salinity management requirements. The trial has highlighted the differences between the states' arrangements for

managing and approving water trade. It has also identified areas for reform in developing compatible arrangements for interstate trade.

The Murray-Darling Basin Commission advises that the pre-existing trading rules in each jurisdiction have proved adequate in minimising or avoiding adverse impacts for trade on the environment or third parties in the pilot area. It notes that while each state's trading rules for the mallee region were adequate for managing the impacts of interstate trade, this may not be the case across the southern Murray-Darling Basin, as the rules were developed specifically for this pilot region, and were not designed for trade across the whole Basin.

### Expanding Interstate Trade

In 2004, COAG agreed that, with regard to the southern Murray-Darling Basin, the relevant governments (the Australian, New South Wales, Victorian and South Australian governments) would put in place the necessary legislative and administrative arrangements to permit the expansion of interstate water trade and ensure competitive neutrality. This includes making corresponding changes in each state to enable exchange rates or tagging of water access entitlements (or both) traded from interstate sources by June 2005, and ensuring that trading rules and zones are only used for the practical management of trading, or for the protection of the environment or third-party interests.

All signatories to the Murray-Darling Basin Agreement allow interstate trade in allocations (temporary trade within a year) and entitlements (multiple years). In this context, the Murray-Darling Basin Commission continues to undertake and coordinate work to assist in removing barriers to interstate trade, including:

- development of a system of exchange rates to allow trading of different water products between states
- preparing adequate environmental controls for trade
- coordination in establishing compatible administrative arrangements for the processing and approval of interstate trades, and
- providing public information on interstate trading activity.

The 1992 Murray-Darling Basin Agreement (Schedule E) provides the institutional and regulatory framework for the

operation of interstate trade in the Southern Murray-Darling Basin. Schedule E currently covers arrangements of the only permanent interstate trading activity—the interstate trading pilot. The Murray-Darling Basin Commission is currently amending Schedule E to provide the framework for the implementation of COAG's expanded interstate trading commitments, in the Murray-Darling Basin context.

The Murray-Darling Basin Commission observes that substantial progress has been made on work to facilitate expansion of interstate trade in the southern connected basin despite the complexity associated with different climatic conditions and administration in different river valleys. Examples of work undertaken by the Murray-Darling Basin Commission to advance interstate trade follow.

*Principles and Rules for Expanded Interstate Permanent Trade in the Southern Murray-Darling Basin*

In June 2005, the Murray-Darling Basin Commission agreed to a series of principles and general trading rules that would apply to permanent interstate trade in the southern Murray-Darling Basin. These principles and rules are designed to practically manage trade and to avoid any adverse environmental or third-party impacts of interstate trade in the Basin.

An exchange rate is the rate of conversion calculated and agreed to be applied to water to be traded from one jurisdiction to another. Exchange rates apply to the conversion of one class of entitlement reliability to another, and to account for transmission losses associated with a trade of an entitlement.

Potential third-party impacts of trade have been considered by the Murray-Darling Basin Commission in detail through extensive modelling of exchange rates to apply to trades between water sources and for conversion of different reliability entitlements with the southern Murray-Darling Basin. As a result of this modelling, a matrix of exchanges rates for interstate trade was presented to the Murray-Darling Basin Commission in 2005, and may be recommended to the next Murray-Darling Basin Ministerial Council meeting in 2006. The current period of relatively low rainfall has highlighted the need to consider the third-party impacts of the trade on supply reliability. The Murray-Darling Basin Commission Interstate Water Trade Project Board (responsible for facilitating compatible interstate

trading arrangements) is considering a number of proposals to address this issue.

*Water Access Entitlement Tagging*

The Murray-Darling Basin Commission Interstate Water Trade Project Board has also been considering the arrangements for, and implications of, interstate trading by water access entitlement tagging. Water tagging is an accounting approach that allows a traded water access entitlement to retain its original characteristics when traded to a new jurisdiction, rather than being converted into the form issued in the new jurisdiction. The water access entitlement remains subject to the relevant legislative and administrative arrangements of the state of origin. The recipient state is responsible for the site use approval that allows the entitlement to be used.

The Interstate Water Trade Project Board has identified legislative amendments that may be necessary in relevant jurisdictions to commence tagged trading.

Amendments to the 1992 Murray-Darling Basin Agreement (Schedule E – Interstate Transfer of Water Allocations) to address water supply, administration of trade and Murray-Darling Basin Cap issues, would also be required to implement a tagged trading system.

*Removing Barriers to Trade*

Under the National Water Initiative, southern Murray-Darling Basin governments that are members of the Murray-Darling Basin Ministerial Council agreed, by June 2005, to remove barriers to trade out of irrigation areas up to an annual threshold limit of four per cent of the total water entitlement in the southern Murray-Darling Basin. Governments recognised that lifting barriers to trade out of serviced irrigation areas can lead to a net trade out of entitlements, as water moves to higher value or more profitable uses. These governments agreed in the National Water Initiative that mechanisms to manage impacts of trade out of water, such as access and exit fees, do not become barriers to trade in themselves.

The Murray-Darling Basin Commission has undertaken work on access and exit fees to help the states and irrigation providers set reasonable access and exit fees.

### *Access and Exit Fees*

The application of access and exits fees can be used to manage the third-party impacts arising from the potential stranding of assets following the trade of water out of serviced irrigation areas. Stranded assets can arise when water traded out of an irrigation area leaves fewer users to meet the fixed costs of the supplying infrastructure.

Access fees are paid by the water user, as part of an agreement with the water service provider to provide ongoing access to the provider's water supply infrastructure to deliver water to the nominated site. An exit fee typically represents a one-off payment made by a user to a water service provider when access to the provider's supply infrastructure is no longer needed (when a water entitlement is traded out of a supply system for example).

Access and exit fees need to be carefully applied to ensure they adequately address the issues of stranded assets, while not becoming a barrier to trade in themselves (if set too high).

To help address these issues, in June 2005, the Murray-Darling Basin Commission agreed to a set of *Principles for the Development of Access and Exit Fees* (MDBC, 2004b).

These principles have been used by jurisdictions and by some irrigation companies in the development of their proposed exit fees.

### Discussion and Assessment

The Commission considers that the Murray-Darling Basin Commission has continued to undertake and coordinate work to promote the expansion of permanent interstate trade in the southern Murray-Darling Basin.

The Murray-Darling Basin Commission interstate pilot trading project has allowed for some interstate trading between New South Wales, Victoria and South Australia. The project has enabled the development of interstate trading rules, and environmental management procedures to minimise the impacts of interstate trade on the environment and other users in the pilot area. The lessons from the pilot project can assist in the development of expanded interstate trading in the southern Murray-Darling Basin. The Commission notes the Murray-Darling Basin Commission advice that, in such a large connected system, interstate

trades between different regions, which are subject to different environmental and water use conditions, will need to be considered on site-specific basis, rather than being able to adopt the rules and controls applied for the pilot project.

The Murray-Darling Basin Commission has continued to take a central role in facilitating the expansion of interstate trade. The Murray-Darling Basin Commission's principles and associated trading rules for interstate trade provide a basis for minimising potential environmental or third-party impacts. The Commission notes that a periodic review of the generic trading rules may be required to ensure they are not presenting barriers to trade (other than for the genuine protection of the environment and third-party interests). This would ensure that relevant jurisdictions met their COAG commitments to remove barriers to temporary and permanent trade.

The Commission notes that the Murray-Darling Basin Commission's *Principles for the Development of Access and Exit Fees* have been used by jurisdictions and irrigation companies in the development of their proposed exit fees. While the principles provide a high-level framework for the development of exit fees, the Commission notes that in the application of these principles, irrigation supply businesses can exercise significant discretion over key variables, such as asset valuation methods, the discount rate and planning horizon used, and infrastructure renewals. Inconsistencies in applying the principles could lead to significantly different outcomes in terms of the size and impact of exit fees. It is necessary to refine the principles so they contain more specific guidance for exit fees, and to establish monitoring principles and arrangements for regulatory oversight of exit fees. Both these actions will help to minimise the risk of exit fees becoming a barrier to expanded intrastate and interstate trade.

The Commission notes that the Murray-Darling Basin Commission is close to finalising amendments to the 1992 Murray-Darling Basin Agreement (Schedule E), to provide for expanded interstate trade beyond the pilot project, as is consistent with the COAG water trading reforms detailed in the National Water Initiative. The Commission is concerned that delays in the development and completion of this schedule, which is fundamental to the operation of interstate

trade as agreed by the relevant Murray-Darling Basin Commission member jurisdictions, is a contributing factor in the delay to expanded interstate trade in the southern Murray-Darling Basin.

### 10.3 Water Recovery for Environmental Outcomes

#### Assessment Issue

For the 2005 National Competition Policy assessment, the Commission is looking for the Murray-Darling Basin Commission to report on its progress with the recovery of water to support the objectives of The Living Murray and the implementation of the 'First Step' decision.

The Murray-Darling Basin Commission facilitates the implementation of The Living Murray Initiative with the partner governments by providing technical support. The technical support provided by the Murray-Darling Basin Commission includes hydrological modelling, developing consistent guidelines to assess water recovery projects (eg. the volume recovered and cost), and commissioning independent assessments.

On 26 November 2004, the Murray-Darling Basin Ministerial Council agreed in principle to the implementation of an initial four water recovery packages, which will recover 240 gigalitres at a cost of \$179 million. This is nearly half the water to be recovered in the 'First Step' decision, costing about 36 percent of the \$500 million Living Murray investment. Investment plans are currently under development.

The Murray-Darling Basin Commission is providing technical support with the implementation of the four initial water recovery packages, in accordance with the *Living Murray Business Plan*. The four water recovery packages are:

- Goulburn-Murray Water Recovery Package, which will recover 145 gigalitres of water at a cost of \$93 million. (Victoria)
- Lake Mokoan Water Recovery Package, which will recover 24 gigalitres of water at a cost of \$13.7 million. (Victoria)
- New South Wales Water Recovery Proposal A, which will recover nine gigalitres of water at a cost of \$8.9 million

through acquisition of Innovative Water Products, and

- New South Wales Water Recovery Proposal B, which will recover 62 gigalitres of water at a cost of \$63.25 million through infrastructure improvement works such as pipelines.

Additional detail on each water recovery package is provided in the New South Wales and Victoria chapters of this assessment.

The Murray-Darling Basin Ministerial Council is also supporting the development of new water recovery packages, as well as investigating the potential for water recovery by reducing river and storage losses along the River Murray, Edward River and lower Darling River systems. The Council has invested \$1 million to undertake feasibility assessments of infrastructure improvement projects for water recovery. Many of these projects aim to reduce water 'losses' from evaporation and seepage in irrigation districts, or evaporative losses from frequently inundated wetlands connected to weir pools along the River Murray. As a result of this programme, nine feasibility assessments have been initiated in New South Wales, Victoria and South Australia.

#### Submissions

The World Wildlife Fund Australia's (WWF-Australia) 2005 submission expresses concerns that the option of purchasing entitlements is increasingly being seen as a last resort water recovery measure. WWF-Australia believe that the purchase of permanent water entitlements for the environment should be considered as a fair, legitimate and potentially cost-competitive way of recovering water to ensure over-allocation is addressed and environmental outcomes are achieved.

#### Discussion and Assessment

The Murray-Darling Basin Commission has demonstrated progress with the recovery of water to support the objectives of The Living Murray Initiative and the implementation of the 'First Step' decision.

The Commission acknowledges that four water recovery packages are currently listed on the Eligible Measures Register, which represents nearly half of the water to be recovered in the 'First Step' decision. The Commission

**is aware that the Murray-Darling Basin Commission is providing technical support to assist with implementation of each package.**

**Noting WWF-Australia's concern that the option of purchasing entitlements is increasingly being seen as a last resort water recovery measure, it is important to note that one of the four water recovery packages currently listed on the Eligible Measures Register involves the recovery of water through market based purchase.**

**The Commission notes that nine feasibility assessments for new water recovery packages have been initiated in New South Wales, Victoria and South Australia. The Commission acknowledges the Murray-Darling Basin Commission's \$1 million investment to support these assessments.**

**On the basis of the above discussion, the Commission considers that the Murray-Darling Basin Commission is making significant progress towards meeting its COAG commitment in this area.**

## SUBMISSIONS TO THE 2005 NATIONAL COMPETITION POLICY ASSESSMENT OF WATER REFORM PROGRESS

Sub no.	Submitter	Date
1	Tasmanian Conservation Trust	9 September 2005
2	Consumer Law Centre of Victoria	13 September 2005
3	Pioneer Valley Water Board	15 September 2005
4	World Wildlife Fund - Australia	19 September 2005
5	East End Mine Action Group (Inc)	23 September 2005
6	Namoi Water (NSW)	27 September 2005
7	New South Wales Irrigators Council	11 October 2005
8	Combined Environmental Non-government Organisations	5 October 2005
9	Environment Victoria and the Australian Conservation Foundation	28 October 2005
10	Queensland Farmers' Federation	14 November 2005
11	World Wildlife Fund - Australia	7 February 2006
12	Environmental Defenders Office	17 February 2006



## REFERENCES

- ANZECC & ARMCANZ 2000a, *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*, Australian and New Zealand Environment and Conservation Council, and Agriculture and Resource Management Council of Australia and New Zealand, Canberra.
- 2000b, *National Water Quality Management Strategy – Guidelines for Sewage Systems and Reclaimed Water*, Canberra.
- Ariyaratnam, J. and Middlemis, H. 2002, *Kemerton Water Study – Phase 2: Final Report*. Aquaterra Consulting Pty Ltd.
- Arthington, A., Brizga, S., Choy, S., Mackay, S., Pusey, B. and Werren, G. 2001, *Pioneer Valley Water Resource Plan – Current Environmental Conditions and Impacts of Existing Water Resource Development*, Department of Natural Resources and Mines, Brisbane.
- Australian Capital Territory (ACT) Government 2004, *Think water, act water*, Canberra.
- Brizga, S., Arthington, A., Pusey, B., Kennard, M., Werren, G., Craigie, N. and Choy, S. 2002, *Benchmarking, a “Top-Down” Methodology for Assessing Environmental Flows in Australian Rivers*, Technical Paper.
- COAG (Council of Australian Governments) 1994, *Water Reform Framework*, Canberra
- 2004a, *Intergovernmental Agreement on a National Water Initiative*, Canberra.
  - 2004b, *Intergovernmental Agreement on Addressing Water Overallocation and Achieving Environmental Objectives in the Murray-Darling Basin*, Canberra.
- Cottingham P., Quinn G., Norris R., King A., Chessman B. and Marshall C. 2005, *Environmental Flows Monitoring and Assessment Framework. Technical report*, CRC for Freshwater Ecology, Canberra.
- Cottingham, P., Stewardson, M., Hannan, G., Hillman, T., Humphries, P., Metzeling, L. and Roberts, J. 2001, *Final Report of the Broken Scientific Panel on the environmental condition and flows of the Broken River and Broken Creek, Draft Technical Report*, Cooperative Research Centre for Freshwater Ecology, Canberra University, Canberra
- Cullen, P., Marchant, R. and Mein, R. (Independent Scientific Review Panel) 2003, *Review of Science Underpinning the Assessment of the Ecological Condition of the Lower Balonne System*, Report to the Queensland Government.
- DHAC (Darwin Harbour Advisory Committee) 2003, *Darwin Harbour Regional Plan of Management*, Department of Infrastructure, Planning and Environment, Darwin.
- DEUS (Department of Energy, Utilities and Sustainability) 2004, *Best Practice Management of Water Supply and Sewerage: Guidelines*, Sydney.
- 2005, 2003–04 *Water Supply and Sewerage Performance Monitoring Report*, Sydney.
- DIPE (Department of Infrastructure, Planning and Environment) (Northern Territory) 2002a, *Katherine-Daly Draft Water Resource Strategy 2002*, Darwin.
- 2002a, *Ti-Tree Region Water Resource Strategy 2002*, Darwin.
  - 2003, *Ilparpa Swamp Rehabilitation Plan*, Ilparpa Swamp Rehabilitation Committee, Darwin.
- DIPNR (Department of Infrastructure, Planning and Natural Resources) 2004a, *A guide to the Water Sharing Plan for the Lachlan Regulated River Water Source*, Sydney.
- 2004b, *A guide to the Water Sharing Plan for the Hunter Regulated River Water Source*, Sydney.
  - 2004c, *Water Sharing Plan for the Lachlan Regulated River Water Source* (as amended on 1 July 2004), Sydney.
  - 2004d, *Water Sharing Plan for the Hunter Regulated River Water Source*, Sydney.
  - 2004e, *Water Sharing Plan for the Murrumbidgee Regulated River Water Source*, Sydney.
  - 2004f, *Meeting the Challenges – Securing Sydney’s water future*, Sydney.
- DLWC (Department of Land and Water Conservation) 1998, *Lachlan State of the Rivers Report 1997*, Sydney.
- 2000, *Hunter State of the Rivers and Estuaries Report*, Sydney
- DNR (Department of Natural Resources) 2005, Submission to IPART to set *Bulk Water Resource Management Charges from 1 July 2005*, Sydney.
- DNRE (Department of Natural Resources and Environment) 2002, *Victorian River Health Strategy: Healthy Rivers, Healthy Communities & Regional Growth*, Melbourne.
- DNREA (Department of Natural Resources, Environment and the Arts) (Northern Territory) 2005, *Alice Springs Water Resource Strategy: Preliminary Draft – August 2005*, Darwin.
- DNRM (Department of Natural Resources and Mines) 1999, *Water Resource (Fitzroy Basin) Plan*, Subordinate legislation 1999, Brisbane
- 2000a, *Water Resource (Cooper Creek) Plan, Subordinate legislation 2000*, Brisbane.
  - 2000b, *Water Resource (Boyne River Basin) Plan, Subordinate legislation 2000*, Brisbane.
  - 2000c, *Water Resource (Burnett Basin) Plan, Subordinate legislation 2000*, Brisbane.
  - 2000d, *Condamine-Balonne Environmental Flows Technical Report, Water Resource Allocation and Resource Management*, Brisbane

- 2001a, *Pioneer Valley Water Resource Plan – Hydrology Assumptions Report – Hydrology: Existing Entitlement Case Assumptions and Data*, Brisbane.
  - 2001b, *Barron Water Resource Plan – Environmental Investigations Report*, Technical Advisory Panel, Brisbane.
  - 2001c, *Barron Water Resource Plan – Ecological Implications Report*, Technical Advisory Panel, Brisbane.
  - 2001d, *Pioneer Valley Water Resource Plan – Condition and Trend Report*, Brisbane.
  - 2001e, *Pioneer Valley Water Resource Plan – Environmental Flow Report – Proposed environmental flow performance measures*, Technical Advisory Panel, Brisbane.
  - 2002a, *Water Resource (Barron) Plan, Subordinate Legislation 2002*, Brisbane.
  - 2002b, *Water Resource (Pioneer Valley) Plan, Subordinate legislation 2002*, Brisbane.
  - 2003a, *Boyne River Basin Resource Operations Plan*, Brisbane
  - 2003b, *Water Resource (Border Rivers) Plan, Subordinate legislation 2003*, Brisbane.
  - 2003c, *Water Resource (Moonie) Plan, Subordinate legislation 2003*, Brisbane.
  - 2003d, *Water Resource (Warrego, Paroo, Bulloo and Nebine) Plan, Subordinate legislation 2003*, Brisbane.
  - 2003e, *The Value of Water*, Scoping Paper, Brisbane.
  - 2004a, *Water Act 2000 Information Brochure 7: Trading in Water Allocations*, Brisbane.
  - 2004b, *Water Resource (Condamine and Balonne) Plan, Subordinate legislation 2004*, Brisbane.
  - 2004c, *Burnett Basin Resource Operations Plan*, Brisbane.
  - 2005a, *Water Resource (Great Artesian Basin) Plan 2005, Subordinate Legislation 2005*, Brisbane.
  - 2005b, *Burnett Basin Resource Operations Plan*, Brisbane.
  - 2005c, *Barron Resource Operations Plan*, Brisbane.
  - 2005d, *Pioneer Valley Resource Operations Plan*, Brisbane.
  - 2005e, *Policy Overview: Rural Irrigation water prices for SunWater schemes*, Brisbane.
- DPIWE (Department of Primary Industries, Water and Environment) and NHT (Natural Heritage Trust) 2000, *Clyde River Environmental Flows IFIM Evaluation of Minimum Flows*, Hobart.
- 2000b, *Community Service obligation Policy and Guidelines for Local Government in Tasmania*, November 2000, Hobart.
  - 2003, *Urban Water and Wastewater Pricing Guidelines Consistent with the COAG Water Reforms for Local Government in Tasmania*, January 2003, Hobart.
  - 2001a, *Water Management Policy: Water for Ecosystems, Policy No. 2001/1*, Hobart.
  - 2001b, *Water Development Plan for Tasmania.*, Hobart.
  - 2002, *Tasmanian Natural Resource Management Framework*, Hobart.
  - 2003a *Water Resources Policy: Guidelines to Assess Applications for New Water Allocations from Watercourses during Winter, Policy No. 2003/1*, Hobart.
  - 2003b, *The Tasmanian Surface Water Quality Monitoring Strategy*, Hobart.
  - 2004, *Guiding Principles for Water Trading in Tasmania, Water Resources Policy No. 2003/2*, Hobart.
  - 2005a, *Generic Principles for Water Management Planning, Water Resources Policy No. 2005/1*, Hobart.
  - 2005b, *Mersey River Water Management Plan*. Water Assessment and Planning Branch, Hobart.
  - 2005c, *Lakes Sorell and Crescent Water Management Plan*. DPIWE and the Inland Fisheries Service, Hobart.
  - 2005d, *River Clyde Water Management Plan*. DPIWE and the Inland Fisheries Service, Hobart.
  - 2005e, *Report on the Operation of the Water Management Act 1999*, Hobart.
  - 2005f, *Review of Fees Payable Under the Water Management Act 1999 Discussion Paper*, Hobart.
- DSE (Department of Sustainability and Environment) (Victoria) 2001, *The Value of Water: A guide to water trading in Victoria*, Melbourne.
- 2004, *Victorian Government White Paper – Securing Our Water Future Together: Our Water Our Future*, Melbourne.
  - 2005, *State Water Report 2003 – 2004: A statement of Victorian water resources*, Melbourne.
- Department of Treasury and Finance 1996, *Investment Evaluation and Policy Guidelines*, Victoria.
- DPAC (Department of Premier and Cabinet) 2000a, *Investigation of the Cost-Effectiveness of Local Councils Implementing Two-Part Pricing for Urban Water Services*, Hobart.

- DoE (Department of Environment) (Western Australia) 2004a, *Stormwater Management Manual for Western Australia*, Perth.
- 2004b, *Water Quality Protection Note: Dairy Processing Plants*, Perth.
  - 2005a, *The Pilbara Coastal Water Quality Consultation: an update – June 2005*, Perth.
  - 2005b, *Environmental Management Plan for Cockburn Sound and its Catchment*, Perth.
- DoE (Department of Environment) and SRT (Swan River Trust) (Western Australia) 2005, *Decision Process for Stormwater Management in Western Australia*, Perth.
- DoW (Department of Water) (Western Australia) 2005, *Local Area Management Plan for the Groundwater Resources of the Kemerton Subareas*, Perth.
- DWLBC (Department of Water, Land and Biodiversity Conservation) (South Australia) 2005a, *Prescription of Water Resources, Fact Sheet 26*, ([www.dwlbc.sa.gov.au](http://www.dwlbc.sa.gov.au)), accessed electronically December 2005, Adelaide.
- 2005b, *Environmental Flows for the River Murray: South Australia's framework for collective action to restore river health 2005 – 2010*, Adelaide.
- DWR (Department for Water Resources) 2000a, *State Water Plan 2000, Volume 1: Policies for a Sustainable Future*, Adelaide.
- 2000b, *State Water Plan 2000, Volume 2: South Australia's Water Resources*, Adelaide.
- Derwent Estuary Program, 2005, *Draft WSUD Engineering Procedures for Stormwater Management in Southern Tasmania 2005*, Tasmania.
- Environment ACT (Australian Capital Territory) 1999, *Environmental Flow Guidelines*, Canberra.
- 2005, *Draft Environmental Flow Guidelines*, Canberra.
- EPA (Queensland) 2001, *Model urban stormwater quality management plans and guideline*, Brisbane.
- 2004, *Information Report Environmental Values Projects – Moreton Bay, South-east Queensland, Mary River Basin, Great Sandy Region and Douglas Shire Waters*, Brisbane.
  - 2005, *Draft Queensland Water Quality Guidelines 2005*, Brisbane.
- EPA (Environmental Protection Authority) (Western Australia) 2005, *Manual of Standard Operating Procedures for Environmental Monitoring against the Cockburn Sound Environmental Quality Criteria (2003 – 2004)*. A supporting document to the State Environmental (Cockburn Sound) Policy 2005, Perth.
- EPA (Environmental Protection Authority) (South Australia) 2003, *Draft Code of Practice for Wastewater Overflow Management: For Public Consultation*, Adelaide.
- 2005, *Port Waterways Water Quality Improvement Plan – Stage 1*, Adelaide.
- EPA (Environmental Protection Agency) (Victoria) 2005, *Guidelines for Environmental Management – Dual Pipe Water Recycling Schemes – Health and Environmental Risk Management*, Melbourne .
- ERA (Economic Regulation Authority) 2005, *Final Report: Inquiry on Urban Water and Wastewater Pricing*, Perth.
- ESCOSA (Essential Services Commission of South Australia) 2004a, *Inquiry into the 2004-05 Urban Water Pricing Process*, Adelaide.
- 2004b, *Inquiry into the 2004-05 Wastewater Pricing Process*, Adelaide.
  - 2005, *Inquiry into the 2005-06 Metropolitan and Regional Water and Wastewater Pricing Processes*, Adelaide
- Glenelg-Hopkins CMA 2004, *Glenelg Hopkins River Health Strategy 2004-2009*, Glenelg Hopkins CMA, Hamilton.
- GPOC (Government Prices Oversight Commission) 2004a, *Investigation into the pricing policies of Hobart Regional Water Authority, Esk Water Authority and Cradle Coast Water, Final Report*, July 2004, Hobart.
- 2004b, *Local Government Water and Wastewater Businesses Full Cost Recovery Compliance Review 2002-03 Report*, Hobart.
  - 2005, *Local Government Water and Wastewater Businesses Full Cost Recovery Compliance Review 2003-04 Report*, Hobart.
- Healthy Waterways 2001, *South East Queensland Regional Water Quality Management Strategy*, Brisbane.
- Hobart Water 2005, *Annual Report*, Hobart
- ICRC (Independent Competition and Regulatory Commission) 2003, *Final Report: Water Abstraction Charge*, Canberra.
- 2004, *Investigation into prices for water and wastewater services in the ACT*, Canberra.
- Ife, D, & Skelt, K. 2004, *Murray-Darling Basin Ground water Status: Summary Report 1990 – 2000*, Canberra
- IPART (Independent Pricing and Regulatory Tribunal) 2001, *Bulk Water Prices from 1 October 2001*, Sydney.
- 2004, *Bulk Water Prices From 2005-06 Issues Paper*, Sydney.
  - 2005, *Investigation into Water and Wastewater Service Provision in the Greater Sydney Region*, Sydney.
- IRSC (Irrigation Review Steering Committee) 2005, *State Water Strategy: Irrigation Review – Final Report*. Western Australia.

- LGP (Local Government and Planning, Environment Protection Agency) 2004, *Towards Sustainable Housing in Queensland – Discussion Paper*. Brisbane.
- Minister for the Environment and Heritage (Australian Government) 2005, *\$4.8 million to Improve Great Barrier Reef Water Quality*, Media Release, November 28, 2005.
- MDBC (Murray Darling Basin Commission) 2004a, *Basin Salinity Management Strategy 2003-2004 Salinity Implementation Report*, Canberra.
- 2004b, *Principles for the Development of Access and Exit Fees*, Canberra.
  - 2005a, *Living Murray Business Plan*, Canberra.
  - 2005b, *Report of the Independent Audit Group for Salinity 2003-04*, Canberra.
  - 2005c, *Native Fish Strategy Annual Implementation Report 2003-04*, Canberra
  - 2005d, *Review of the River Murray Water Quality Monitoring Program*, Canberra.
- MDBMC (Murray Darling Basin Ministerial Council) 1992, *Murray Darling Basin Agreement*.
- NCC (National Competition Council) 2001, *Assessment of governments' progress in implementing the National Competition Policy and related reforms: Water*, National Competition Council, Melbourne.
- 2002, *Assessment of governments' progress in implementing the National Competition Policy and related reforms: 2002, Volume Two: Water*, National Competition Council, Melbourne.
  - 2003a, *Assessment of governments' progress in implementing the National Competition Policy and related reforms: 2003, Volume Three: Water*, National Competition Council, Melbourne.
  - 2003b, *Water Reform in New South Wales, National Competition Policy Supplementary 2002 Water Reform Assessment*, National Competition Council, Melbourne.
  - 2004a, *New South Wales: allocation of water to the environment, National Competition Policy Deferred 2003 Water Reform Assessment*, National Competition Council, Melbourne.
  - 2004b, *Assessment of governments' progress in implementing the National Competition Policy and related reforms: 2004, Volume Two: Water*, National Competition Council, Melbourne.
- NHMR & NRMCC (National Health and Medical Research Council & Natural Resource Management Ministerial Council) 2004, *National Water Quality Management Strategy: Australian Drinking Water Guidelines*, Canberra.
- New South Wales Government 2002, *Access Licences Dealings Principles Order 2002*, Sydney.
- Non-Urban Study Steering Committee, 2003, *Shaping Our Territory, Final Report: Opportunities for Non-Urban ACT*, ACT Government Publishing Services, Canberra
- Northern Territory Government 2005, *The Integrated Natural Resource Management Plan for the Northern Territory: Sustaining Our Resources – People, Country and Enterprises*, Darwin.
- NRMC (Natural Resources Management Council) (South Australia) 2005, *Draft State Natural Resources Management Plan: Towards South Australia's State Natural Resources Management Plan 2005 – 2010* (Consultation document 2005), Adelaide.
- NWC (National Water Commission) 2005a, *Water Reform Assessment Framework 2005*, Canberra.
- 2005b, *Water Smart Australia Programme: Guidelines*, Canberra
- OCPE (Office of the Commissioner for Public Employment) (Northern Territory) 2004, *Community Engagement Framework*, Darwin.
- Ogden, R., Davies, P., Rennie, B., Mugodo, J. and Cottingham, P. 2004, *Review of the 1999 ACT Environmental Flow Guidelines*, a Report by the CRCFE to Environment ACT, Canberra.
- OUM (Office of Urban Management) 2005a, *South East Queensland Infrastructure Plan and Program 2005-2026*, Brisbane.
- 2005b, *South East Queensland Regional Plan 2005 – 2026*, Brisbane.
- Power and Water Corporation 2005, *Annual Report 2005*, Darwin.
- Premier of New South Wales 2005, *Desalination Plant to be owned by the people of New South Wales*, Press Release, November 23, 2005, Sydney.
- Queensland Government 2005, *Queensland Water Plan 2005-2010: An action plan to meet our future water needs*, Brisbane.
- QUDM 1994, *Queensland Urban Drainage Manual*, prepared for Department of Primary Industries, Institute on Municipal Engineering Australia and Brisbane City Council by Neville Jones and Associates Pty Ltd., Brisbane.
- RCWCMB (River Murray Catchment Water Management Board) 2003, *Catchment Water Management Plan for the River Murray in South Australia 2003-2008*, Adelaide.
- Sharpe A.K. & Quinn G.P. 2004, *Monitoring Environmental Flows in the Wimmera and Glenelg Rivers*. Sinclair Knight Merz and CRC for Freshwater Ecology, Melbourne.
- South Australian Centre for Economic Studies 2005, *Review of the Efficiency of SA Water's Business Costs and Performance*, Adelaide.

- South Australia Government 2000a, *Water Allocation Plan Clare Valley Prescribed Water Resources Area*, Clare Valley Water Resource Planning Committee, South Australia.
- 2000b, *Water Allocation Plan Northern Adelaide Plains Prescribed Wells Area*, Adelaide and Mount Lofty Ranges Natural Resources Management Board, South Australia.
  - 2001, *Water Allocation Plan Padthaway Prescribed Wells Area*, South East Catchment Water Management Board, South Australia.
  - 2002, *Water Allocation Plan for the River Murray Prescribed Water Course*, River Murray Catchment Management Board, South Australia.
  - 2003, *Water Allocation Plan for the Tintinara Coonalpyn Prescribed Wells Area*, South East Catchment Water Management Board, South Australia.
  - 2004b, *Transparency Statement Urban Water Prices in Metropolitan and Regional South Australia*, 2004-05.
  - 2004a, *Transparency Statement Wastewater Prices in Metropolitan and Regional South Australia*, 2004-05.
  - 2004c, *Transparency Statement Water and Wastewater Prices in Metropolitan and Regional South Australia*, 2004-05.
  - 2006, *Transparency Statement Water and Wastewater Prices in Metropolitan and Regional South Australia*, 2006-07.
- State Water Corporation 2004, *State Water Corporation Pricing Submission to the Independent Pricing and Regulatory Tribunal*, Sydney.
- 2005, *State Water Corporation Bulk Water Pricing Submission to the Independent Pricing and Regulatory Tribunal*, Sydney.
- Stewardson, M.J. and Cottingham, P. 2002, *A demonstration of the flow events method: Environmental flow requirements of the Broken River*, Australian Journal of Water Resources 5(1):33-48.
- Sydney Water 2005, *Sydney's Desalination Project: Summary of the Environmental Assessment for Public Comment*, Sydney.
- The State of Queensland and the Commonwealth of Australia 2003, *Reef Water Quality Protection Plan; for catchments adjacent to the Great Barrier Reef World Heritage Area*, Queensland Department of Premier and Cabinet, Brisbane.
- Water Corporation 2005, *Annual Report 2005*, Perth.
- WRC (Water and Rivers Commission) 2000, *Environmental Water Provisions Policy for Western Australia, Statewide Policy No. 5*, Perth.
- 2001, *Transferable (Tradable) Water Entitlements for Western Australia, Statewide Policy No. 6*, Perth.
  - 2003, *Management of Unused Licensed Water Entitlements, Statewide Policy No. 11*, Perth.
  - 2005, *Draft Esperance Groundwater Area Water Management Plan*. Department of Environment, Perth.
- Western Australia Government 2003, *Securing Our Water Future – A State Water Strategy for Western Australia*, Perth.
- 2004, *State Water Quality Management Strategy No. 6 (SWQ6): Implementation Framework for Western Australia for the Australian and New Zealand Guidelines for Fresh and Marine Water Quality and Water Quality Monitoring and Reporting (Guidelines No.s 4 & 7: National Water Quality Management Strategy)*.
  - 2005, *Government response to the Report of the Irrigation Review Steering Committee*.