Chapter 6

Institutional arrangements and policy

Introduction

6.1 Institutional arrangements in water management are complex and involve all three levels of government, plus the private sector, across each of the six states and two territories. Adding to that complexity are the many aspects of water management, such as drinking water quality, public health, effluent disposal, urban planning and environmental protection. Water also flows across many jurisdictional boundaries and water management in cities is affected by catchment management and land use in rural areas, and must increasingly take account of river, estuarine and coastal environments that are often distant from urban users.

6.2 As the CRC for Freshwater Ecology put it, the current institutional and policy arrangements for managing urban water are significant barriers to good practice:

> Our current institutional arrangements for managing water in urban areas have proved to have significant weaknesses in terms of delivering on [these] community expectations. The division of responsibilities between agencies and levels of government has ensured that each takes a single purpose view of the problem and we are not getting cost-effective solutions.
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> The separation and isolation of land planning from water planning has been costly. We have largely different organisations or sections of individual organisations responsible for land use planning, catchment management, water supply, sewerage provision and stormwater management. Local governments are important parts of some of these elements, but they rarely manage whole catchments so they have to live with the decisions made by neighbouring local governments. Other elements are managed by regional catchment authorities. We have separate regulators responsible for assurance of human health, assurance of ecosystem health and for financial management, and these regulatory aspects appear to operate in complete isolation.
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> The separation of water supply, drainage and wastewater utilities has inhibited integrated thinking and solutions to the challenges of urban water management.
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> This has been a major institutional impediment to capturing the economic and environmental benefits of recycling opportunities.[1]

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1 CRC for Freshwater Ecology, *Submission 52*, p 6.

Commonwealth legislation and powers

6.3 The Commonwealth's powers to legislate are defined by the Australian Constitution, which does not confer on the Commonwealth any specific powers to regulate either water in particular, or the environment generally and all powers not expressly granted to the Commonwealth are retained by the States.[2]

6.4 The High Court has held[3] that the Commonwealth may use:

> various heads of power to regulate activities in order to protect and conserve the environment, even when those heads of power did not necessarily have any apparent environmental purpose behind them. So long as Commonwealth environmental legislation rests on some head of power – even though not directly touching the environment – the Commonwealth is entitled to act for environmental reasons alone.[4]

6.5 A number of the heads of power can underpin Commonwealth legislation in relation to the environment and water:

- trade and commerce power (s.51(i));
- taxation power (s.51(ii));
- quarantine power (s.51(ix));
- fisheries power (s.51(x));
- corporations power (s.51(xx));
- external affairs power (s.51(xxiv));
- incidental power (s.51(xxxiv));
- power over customs, excise and bounties (s.90);
- financial assistance power (s.96); and
- territories power (s.122).

6.6 According to Professor James Crawford, an authority on Australian constitutional law, in the light of the *Murphyores* case these enumerated powers grant the Commonwealth wide constitutional authority to legislate environmental matters:

> The lesson of a careful study of the last fifteen years experience is that the Commonwealth has, one way or another, legislative power over most large scale mining and environmental matters.[5]

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2 Commonwealth of Australia Constitution Act, Section 107.

3 *Murphyores Inc. Pty. Ltd. v Commonwealth* (1976) 136 CLR 1.

4 Senate Environment, Communications, Information Technology and the Arts References Committee, *Commonwealth Environment Powers*, May 1999, p 7.

5 Crawford J, *The Constitution and the Environment*, (1991) 13 Sydney L.Rev. 11 at p 30. *See also* the discussion in the report of the House of Representatives Standing Committee on Environment and Heritage, *Coordinating Catchment Management*, Dec 2000, p 28.

6.7 The scope of the Commonwealth's constitutional powers over environmental issues is generally decided by negotiation between Commonwealth and state governments and, ultimately, by a High Court decision on the validity of a specific Act. For practical purposes though, the potential for Commonwealth activity in this area is very wide.

6.8 There are three pieces of Commonwealth legislation relevant to urban water management. The *Environment Protection and Biodiversity Conservation Act 1999*, (EPBC) creates (among other things) a regime of environmental impact assessment for actions by the Commonwealth or on Commonwealth land which are likely to have a significant impact on the environment; or actions that are likely to have a significant impact on matters of national environmental significance. These are specified as world heritage areas; Ramsar listed wetlands; listed threatened species and communities; listed migratory species; nuclear actions and the marine environment.[6]

6.9 The EPBC gives the Commonwealth power to become involved with many aspects of urban water management issues, including the building of dams; clearing of wetlands; and pollution of receiving coastal waters.

6.10 The *Great Barrier Reef Marine Park Authority Act 1975* establishes rules for the Commonwealth management of the park and world heritage area and the establishment of the Great Barrier Reef Marine Park Authority.

6.11 Last, is the *National Environmental Protection Council Act 1994*, discussed in Appendix 4.

Commonwealth water policy

6.12 According to Commonwealth officials, the Commonwealth roles in urban water management are primarily in national leadership, standard setting, intellectual contribution and financial investment.[7]

6.13 The principle vehicle for Commonwealth activity is the National Water Quality Management Strategy (NWQMS) which has been evolving since 1992. So far, nineteen of the proposed twenty-one guidelines under the strategy have been published. This includes:[8]

- three general policy documents;
- four water quality benchmarking documents (including the Australian Drinking Water Guidelines and Guidelines for Water Quality Monitoring & Reporting);

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6 Environment Protection and Biodiversity Act, Chapter 2.

7 Department of Agriculture, Fisheries, Forestry–Australia and Environment Australia, *Submission 54*, pp 3 and 17.

8 Department of Agriculture, Fisheries, Forestry–Australia and Environment Australia, *Submission 54*, p 29.

- guidelines for Groundwater Protection;
- Australian Guidelines for Urban Stormwater Management;
- five Guidelines for Sewerage Systems; and
- six Guidelines dealing with aspects of effluent management.

COAG Water Reform Framework and the National Competition Policy

6.14 The overarching framework for water reform in the last decade has been the 1994 Council of Australian Governments (COAG) Water Reform Agreement, made in response to concern about the condition of the country's water resources and the impact that their continuing deterioration would have on economic activity.

6.15 The Agreement comprised a package of measures designed to link both economic and environmental objectives by improving the efficiency of water use as well as the environmental management of the nation's river systems.

6.16 The main elements in the *Water Reform Framework* included a range of interlinked market based measures involving pricing water for full cost recovery, establishing secure access to water separate from land and providing for permanent trading in water entitlements. There was also specific provision of water for the environment, water service providers to operate on the basis of commercial principles, improved institutional arrangements and public consultation and education.

6.17 In 1995 the package of water reforms was included in the national competition policy so that competition payments would provide a financial incentive for all states and territories to achieve the water reforms.

6.18 The key aspects of the urban water reforms were the move to two-part tariffs and in particular volumetric pricing of water to consumers as part of the second part of the tariff; volumetric pricing for metropolitan bulk water and for wastewater services, that pricing to include environmental costs; and the phasing out of cross-subsidies between customer classes and any remaining cross-subsidies in water service provision to be made transparent.

6.19 Urban water reform under national competition policy is now largely complete according to the National Competition Council.[9] Typical results to date have included improved efficiency in water supply with reduced costs of around 20 per cent and reduced urban consumption Australia wide generally by around 20 per cent.

9 Mr Willett, *Proof Committee Hansard*, Melbourne, 23 April 2002, p 290.

6.20 However, few urban water service providers have considered how to account for externalities in their water charges[10] and the National Competition Council considers that this represents the next stage in urban water reform.[11]

6.21 Introducing consumption based pricing for urban water has clearly been a significant driver in reducing urban water consumption. Additionally, creating more transparent lines of accountability and avoiding conflicts of interest improves the efficiency in water service provision which frees up resources that can be used in other areas such as better environmental management, demand management programs and education.

Commonwealth funding programs

6.22 Funding provision is an important Commonwealth role, and one that offers powerful policy leverage.

6.23 The principal Commonwealth funding mechanism is the Natural Heritage Trust (NHT). The first NHT program (NHT 1), contained four relevant programs relevant to water:

- *Coasts and Clean Seas program* – 38 projects, $25.6 million over five years;
- *Living Cities Cleaning Our Waterways Industry Partnership Program* – $2.9 million over two years;
- *Living Cities Urban Stormwater Initiative* – seven projects, $6.8 million over two years; and
- *Waterwatch*: a national community based water monitoring network.[12]

6.24 In July 2002, the second program of the Natural Heritage Trust (NHT 2) commenced, with funding of one billion dollars over five years, across three levels, four programs and ten priorities. The four new programs (down from a total of 23 programs under NHT 1) – Landcare, Bushcare, Rivercare and Coastcare – will deliver the funds according to ten priority objectives.[13]

Problems with competitive grants allocation

6.25 NHT funding is awarded on the basis of competitive bids. While there are advantages in competition, bidders with the best resources and expertise tend to be more successful than for instance councils with low rates bases or groups without incomes who cannot compete on the basis of matching funding quality of bid or in-

10 National Competition Council, Annual Report 2000 - 2001, September 2001, AusInfo, Canberra, p 28.

11 Mr Swan, *Proof Committee Hansard*, Melbourne, 23 April 2002, pp 296-297.

12 Department of Agriculture, Fisheries, Forestry–Australia and Environment Australia, *Submission 54*, pp 15 - 16. *See also* www.waterwatch.org.au

13 Natural Heritage Trust site, at: www.nht.gov.au

kind effort. This can obviously result in an inequitable and non-strategic distribution of funding and whilst the Committee made this observation it did not seek or receive enough evidence to allow it to reach a conclusion that this was or was not the case.[14]

6.26 Officers of Environment Australia provided the Commonwealth's justification for the competitive approach:

> funding should go to the best equipped organisations. There have been instances in the past where groups have obtained funding and in effect the project has been beyond them. The harsh reality is that the better project applications are generally a good indication of the capacity of an individual organisation to have thought through what the issues are and to have come forward with a coherent approach and a submission to address the problem.[15]

6.27 Environment Australia did acknowledge that this was an issue and said three administrative measures had been introduced, designed to minimise the problem. Firstly, the second round of NHT funding, includes a new component called the Envirofund:

> which is looking at providing relatively small grants for community groups as almost entry level to get into the funding cycle, gear themselves up, develop their skills and hopefully later in the piece become part of an organised regional application for funding.[16]

6.28 $20 million will be provided overall under the Environfund.

6.29 Secondly, the networks of Bushcare, Landcare and Waterwatch facilitators exist in part to assist community groups in making applications. Thirdly, project applications are assessed first by regional, then state, then national assessment panels, that aim to ensure that projects are considered in the context of local issues and priorities.[17] EA advise that this will be further enhanced by the linking of NHT funds to projects identified under accredited regional natural resource management plans.[18] The Committee was not in a position to assess the effectiveness of these measures.

Time frames of funding

6.30 There is also the problem of the 'one-off' or fragmented nature of the project funding. The principle of the Commonwealth programs is generally to provide 'catalytic' funds:

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14 This problem was raised in several places: Mr McCarthy, *Proof Committee Hansard,* Perth, 29 April 2002, p 405; *and* Committee briefing, Mosman City Council, 19 April 2002.

15 Mr Hooy, *Proof Committee Hansard*, Canberra 23 May 2002, p 584.

16 Mr Hooy, *Proof Committee Hansard*, Canberra, 23 May 2002, p 584.

17 Mr Hooy, *Proof Committee Hansard*, Canberra, 23 May 2002, p 585.

18 Mr Bott, *Proof Committee Hansard*, Canberra, 22 March 2002, p 5.

> The intention has been that the Commonwealth should not be the permanent solution to addressing natural resource management. This is about capacity building, not just at the community level but also at state agency level, to get them to recognise a problem and be skilled up.[19]

6.31 The plan to 'kickstart' projects is not always successful, since in practice, the projects initiated may not have any alternative source of funding, so that when the Commonwealth funds run out, the project stops. The Western Australian Eastern Metropolitan Regional Council stated that:

> A lot of catchment projects and landcare projects have folded. There is the two- or three-year funding period from the federal government and after that period the project stops.[20]

6.32 In South Australia, Trevor Daniell told the Committee that the Centre for Applied Modelling in Water Engineering:

> were monitoring urban stormwater quality in the very large Barker Inlet wetlands to see what the wetlands were doing. The funding was cut before we could actually do the outflow measurement. We did a lot on the inflow measurement. The wetlands were in place for about a year and then there was no funding, and therefore the effectiveness of the wetlands was not measured.[21]

6.33 The Sullivans Creek Catchment Group in Canberra had similar problems when it was unsuccessful in its bid for a second round of NHT funds.[22]

6.34 Again, officers of EA indicated their awareness of the problem, and explained that the project often turns out to take longer than expected:

> The problem has been that the targets keep moving out; we have had to keep following the targets, and the only way we have been able to bring the community up to the next level has been through continual injection of funds.[23]

The problem of fragmentation

6.35 A fundamental problem identified during the inquiry is the fragmentation that occurs in relation to the management of water.

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19 Mr Hooy, *Proof Committee Hansard*, Canberra, 23 May 2002, p 585.

20 Mr McCarthy, *Proof Committee Hansard*, Perth, 29 April 2002, p 412.

21 Mr Daniell, *Proof Committee Hansard*, Adelaide, 30 April 2002, p 502.

22 Ms Gilles, *Proof Committee Hansard*, Canberra, 22 March 2002, p 64; *see also* Sullivans Creek Catchment Group, *Submission 58A*, p 3.

23 Mr Hooy, *Proof Committee Hansard*, Canberra, 23 May 2002, p 585.

Water cycle fragmentation: Stormwater and the rest

6.36 The jurisdictional separation of the urban water supply and wastewater system from the stormwater system does not reflect the theoretical water cycle. As Mr Davis of the Australian Water Association comments:

> in a city like Sydney, for example, the water authority manages the water supply and the sewerage but the local councils manage the stormwater. In today's climate of trying to manage water holistically, if you have different agencies managing different facets of the water cycle, you cannot integrate it.[24]

6.37 Professor Wong, of the CRC for Catchment Hydrology comments that:

> Generally speaking, we are running our water supply and sewerage systems completely separate from the stormwater systems, and they are run by different organisations in Melbourne.[25]

6.38 Our stormwater management originally had as its principal objectives drainage and the avoidance of flooding. It was not considered necessary for stormwater to be related to water supply or effluent disposal. This has left us with parallel infrastructures, and an institutional heritage that is difficult to budge.[26]

Jurisdictional fragmentation

6.39 Water catchments may be in different local government areas or even States to that in which the water they collect is actually consumed. Sewage may then be piped to a treatment facility in a third area, while stormwater collected in one jurisdiction becomes the waterways of a lower catchment which may have its outfall pipes on a beach in yet another jurisdiction.

6.40 Three examples illustrate this.

6.41 The Great Barrier Reef Marine Park Authority (GBRMPA) has statutory responsibility for the environmental health of the Great Barrier Reef Marine Park and World Heritage Area. However, the major source of pollution to the reef is land based discharges which are the responsibility of the Queensland government.[27]

6.42 In Canberra, care of the Cotter Catchment area is the responsibility of Environment ACT, while the quality of drinking water is that of ActewAGL. If water quality from the catchments deteriorates, it is ActewAGL which must pay extra treatment costs.

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24 Mr Davis, *Proof Committee Hansard*, Sydney, 18 April 2002, p 219.

25 Prof Wong, *Proof Committee Hansard*, Melbourne, 23 April 2002, p 273.

26 Stormwater Industry Association, *Submission 37*, p 4.

27 Great Barrier Reef Marine Park Authority, *Submission 60*, pp 11-12.

6.43 Likewise, in Western Australia, there are different agencies tackling water quality in catchments, wetlands and drainage. The Eastern Metropolitan Regional Council comments that:

> In most cases, the catchment management is not an integrated activity of the local government; it really sits on the outside as a part federally funded/part their funding/part community funded project. … There is a bit of a difference in perspective in terms of how water should be managed, with the local governments focusing on the conveyance flood control aspect and the catchment management projects focusing on at source projects. We really need to bring those two things together[28]

6.44 In Western Australia, the Water Corporation is responsible for reticulated water, while the Water and Rivers Commission administers private groundwater use.[29]

6.45 The same problem applies to stormwater. The CSIRO provides this example of a drain in Sydney's North Western Suburbs:

> Its source is the carpark of a shopping mall. It runs in pipes under the urban area and is controlled at this point by a local council. These pipes discharge to a creek, maintained by the same local council. The creek is not channelised. It then flows to a channelised drain under the control of Sydney Water. Sydney Water's Operating Licence includes requirements that the drain be maintained and cleaned regularly. It then flows to another channelised creek under control of a different council and then to a further section, that is not channelised, but which the same council controls. The creek ultimately discharges into an estuarine area of Sydney Harbour under control of another State Government body. Needless to say, the maintenance programs of the two councils are likely to differ from that of Sydney Water, despite the introduction of catchment based Stormwater Management Plans. Further, accountability for outcomes must naturally remain most unclear. With a multiplicity of players who, ultimately, is responsible for achieving management and environmental outcomes?[30]

6.46 Thus, around Australia the overall stormwater infrastructure is owned by local governments, trunk drainage authorities, and roads and traffic authorities. In Perth, the Water Corporation owns and operates twenty per cent of all stormwater drains, local government owns seventy-five per cent, with Main Roads and Westrail controlling the remaining five per cent. The Stormwater Industry Association summarised the problem in this way:

> Problems occur where there is multiple Local Government control for sections within the same catchment. Catchment boundaries do not coincide with local government boundaries. Local agendas vary, and works

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28 Mr McCarthy, *Proof Committee Hansard, Perth, 29 April 2002*, p 403; *see also* Mr Young, *Proof Committee Hansard*, Melbourne, 23 April 2002, p 336.

29 Dr Humphries, *Proof Committee Hansard*, Perth, 29 April 2002, p 417.

30 CSIRO, *Submission 47*, p 47, quoting Dr Andrew Speers.

> constructed in one [local government] area may be in conflict with strategies in an adjoining area, giving poor or inefficient or inequitable outcomes to the community and/or the environment.[31]

6.47 In Melbourne, the experience of the Bayside City Council is the same:

> We have in fact one major outfall at the very north of our city from the Elster canal which does drain a fairly large part of central Melbourne. Our beaches are certainly affected by litter and other pollutants that come down that canal.[32]

6.48 The Committee heard numerous examples of such fragmentation.

> The Yarra catchment … I think has 38 different municipalities within it. … we have learned very quickly that many of our problems originate upstream, as do most of our solutions.[33]

6.49 Several studies have concluded that:

> … arrangements for integrating stormwater management (both flood control and drainage) are generally chaotic. Control is generally very fragmented and there is a lack of clear accountability for various parts of the water cycle. Furthermore, the relationship between the various operator, regulators, and councils is often blurred, and in many cases the operating agencies are also involved in standard or target setting.[34]

6.50 The Water Corporation of Western Australia sums up the problem:

> Basically our difficulty is that we cannot control the quality of the water that is given to us.[35]

Agency fragmentation

6.51 Even water in a given location is subject to regulation by a number of institutions. Different government agencies have responsibility for natural resource management; human health; environmental protection; and price setting.[36]

6.52 This was illustrated by Mr Head of the Planning Institute of Australia:

> Because of the health regulators and the environmental engineers being different groups in different states and there being a whole bunch of states,

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31 Stormwater Industry Association, *Submission 37*, p 6.

32 Cr Beadle, *Proof Committee Hansard*, Melbourne, 23 April 2002, p 303.

33 Cr Johnstone, *Proof Committee Hansard*, Melbourne, 23 April 2002, p 350.

34 CSIRO, *Submission 47*, p 47, referring to studies by the Australian Academy of Technological Sciences and Engineering and IEAust. *See also* Hawkesbury City Council, *Submission* 53, p 1.

35 Dr Humphries, *Proof Committee Hansard, Perth, 29 April 2002*, p 425.

36 See Table, Appendix 4.

> there are just too many people around the country all doing different things or having different approaches, when clearly if you are going to improve water management you have to solve use and reuse of greywater – recycled water. It needs somebody to bring all the parties together, knock their heads together and say, 'Okay, what are we going to do?'[37]

6.53 Addressing water quality in the Brisbane River may involve negotiation with five agencies, representing all three levels of government responsible for water in the Brisbane river:

- Brisbane City Council to the high water mark (local government);
- the Department of Primary Industries for flora and fauna (Qld government);
- the Environment Protection Agency for water quality (Qld government);
- the Brisbane Port Authority, covering all the port facilities (regulated by the Commonwealth); and
- the Department of Transport for navigation issues (Qld government).

6.54 Dr Essery told the Committee that in NSW:

> … we actually have four regulatory models for the water industry. It is not as bad as it sounds. It is just that Sydney Water and Hunter Water have their own form of operations and it is in their own Acts. We have the Water Supplies Authority Act, which looks after Broken Hill, Cobar and some big irrigation industries, and we have the local governments which all operate under the Local Government Act. The minister regulates local government utilities through the Local Government Act, in which we administer that section.[38]

6.55 As Professor Cullen at the CRC for Freshwater Ecology explained:

> We have largely different organisations or sections of individual organisations responsible for land use planning, catchment management, water supply, sewerage provision and stormwater management. Local Governments are important parts of some of these elements, but they rarely manage whole catchments so they have to live with the decisions made by neighbouring local governments. Other elements are managed by regional catchment authorities. We have separate regulators responsible for assurance of human health, assurance of ecosystem health and for financial management, and these regulatory aspects appear to operate in complete isolation.[39]

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37 Mr Head, *Proof Committee Hansard*, Canberra, 22 March 2002, p 38.

38 Dr Essery, *Proof Committee Hansard*, Sydney, 18 April 2002, p 192.

39 CRC for Freshwater Ecology, *Submission* 52, p 6.

6.56 Where the approval of more than one agency is required for a project, different priorities,[40] processes or timeframes can be frustrating.[41] Councillor Johnstone of the City of Port Phillip gave this example:

> … when council commenced its thinking on the Inkerman Street depot project,[42] we said we did not just want grey water reuse; we also wanted black water reuse. The EPA said, 'You can't do that,' … The EPA told us reasons why not, rather than how to manage those risks and get around them. That is because their charter is to protect the receiving waters rather than to have dispersed treatment throughout metropolitan Melbourne, which is a headache for anyone to manage.
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> So I think there are barriers when objectives are not shared.[43]

6.57 The Eastern Metropolitan Regional Council in Western Australia voiced similar views about the need to rectify current fragmentation:

> At the moment we are all talking different speak. All the different agencies are looking after the area that they control; hence the lack of both coordination and institutional arrangements.[44]

Vertical fragmentation

6.58 Agencies managing water must manage complex relationships with other agencies at their own level, and deal with a vertical hierarchy of regulatory agencies across the three levels of government, and inter-governmental groups such as COAG. Councillor Ferrara of the Western Sydney Regional Organisation of Councils comments on the:

> complex agency interactions which affect planning outcomes, and the poor integration of these agencies with respect to information and objectives, with regard to water management. There is a current paucity of interaction at a strategic level between the three levels of government and their various agencies.[45]

6.59 Even large centralised councils such as the Brisbane City Council can find it a complex task to negotiate this hierarchy of plans and laws. Brisbane City Council:

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40 Prof Wong, *Proof Committee Hansard*, Melbourne, 23 April 2002, p 270.

41 Cr Ferrara, *Proof Committee Hansard*, Sydney, 18 April 2002, p 236.

42 This project is described in Appendix 5.

43 Cr Johnstone, *Proof Committee Hansard*, Melbourne, 23 April 2002, p 356.

44 Mr McCarthy, *Proof Committee Hansard, Perth, 29 April 2002*, p 404. The WA Eastern Metropolitan Regional Council, has had planning decisions to implement water sensitive urban design principles occasionally overridden by the state government Western Australian Planning Commission. Mr McCarthy, *Proof Committee Hansard, Perth, 29 April 2002*, p 406.

45 Cr Ferrara, *Proof Committee Hansard*, Sydney, 18 April 2002, p 235.

> is certainly pushing these kinds of principles, but there is a way to go with the impediments that you have to deal with: local government, state government, the supply authorities, the taps and toilet authorities and the head works authorities.[46]

Planning fragmentation

6.60 There is also significant fragmentation in planning around Australia, and although planning is closely related to the other aspects of fragmentation discussed above, it should be discussed separately for two reasons. Firstly, once planning decisions are made and developments are in place, the costs of fixing mistakes or retrofitting solutions is generally high and for this reason the problems may continue for the lifespan of the infrastructure.[47]

6.61 Secondly, there is an important relationship between land use and water quality, catchments and water treatment, and stormwater controls and water quality in receiving waters. Changing lands use in ways that are likely to degrade water quality, should be prevented, particularly in areas prone to erosion, high salinity,[48] or acid sulphate soils.[49] Similarly, wetlands, estuaries and mangrove ecosystems are important for water treatment and quality, and their destruction for urban and waterfront developments should be avoided.

6.62 Very often, the agency that grants the planning permission is not the one that must cope with the consequences. The Committee heard evidence from both the Western Sydney Regional Organisation of Councils and the Australian Water Association concerning the development of Western Sydney:

> A classic case is the development of Western Sydney. If Sydney Water had had its druthers there are certain areas out west that would have been quarantined for development simply because the pressures on the water cycle are unsupportable but the political imperative from the planning people was that you had to develop. … you really need a very high-level planning oversight which is sensitive to this business of sustainability and takes transport, water and all the other factors into account. I think that is lacking.[50]

6.63 The Nature Conservation Council of NSW, described how the Department of Urban Affairs and Planning makes a population projection, and identifies which areas will be developed to meet that projection. Sydney Water must then provide water,

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46 Prof Mein, *Proof Committee Hansard*, Melbourne, 23 April 2002, pp 274-5.

47 Mr Wilkinson, *Proof Committee Hansard*, Canberra, 23 May 2002, p 556.

48 Western Sydney Regional Organisation of Councils, *Submission 62*, p 10.

49 Great Barrier Reef Marine Park Authority, *Submission 60*, p 5.

50 Mr Davis, *Proof Committee Hansard*, Sydney, 18 April 2002, p 229. Similar comments were made by Cr Ferrara, *Proof Committee Hansard*, Sydney, 18 April 2002, pp 234 & 236.

stormwater and sewerage supply solutions, while the local councils inherit the legacy of managing these systems.[51]

6.64 According to the Sullivans Creek Catchment Group, similar problems of planning fragmentation occur even between elements of a single agency:

> There is an apparent lack of coordination and strategic planning across Department of Urban Services agencies to enable the department to seek sustainable outcomes through stormwater and waterway management.[52]

6.65 In Western Australia, the Eastern Metropolitan Regional Council has found that within councils, the environment, engineering and planning sections do not come together as team to plan for the best outcome for a parcel of land. Instead, all the other decisions have often been made by the time environmental ones are considered.[53]

6.66 Representatives of Environmental Business Australia have had similar experience:

> The most important issue, though, is lack of integration in our decision making processes. Many of the vital decisions at the policy level, particularly on urban water strategies and projects, are often made without thorough definition of, firstly, the objectives, secondly, the evaluation of options and, thirdly, consideration of the consequences. Urban planning activity is fairly rarely closely linked to urban water management planning activity.[54]

Social fragmentation and poor consultation

6.67 In some instances the professionals who do the planning and implementation of water management projects, can be trying to lead change by implementing best practice initiatives, without having successfully 'sold' the idea to the surrounding community. Mr Daniell of the University of Adelaide, said:

> We get a group of consultants in that develops a plan, but the people within the catchment do not own the plan – and that is a problem we have always had with big planning documents.[55]

6.68 A contributing factor to poor consultation is the culture in some water authorities, as described by Mrs Simpson of the Sunshine Coast Environment Council:

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51 Ms Ridge, *Proof Committee Hansard*, Sydney, 18 April 2002, p 245.

52 Ms Gillies, *Proof Committee Hansard*, Canberra, 22 March 2002, p 58.

53 Mr McCarthy, *Proof Committee Hansard, Perth, 29 April 2002*, p 407.

54 Mr Crockett, *Proof Committee Hansard*, Melbourne, 23 April 2002, p 574.

55 Mr Daniell, *Proof Committee Hansard*, Adelaide, 30 April 2002, p 511.

> They have never had to consult with the community. It has been a very closed culture and they keep their cards very close to their chests. They are used to making the decisions themselves and not having to actually relate to the community at all. I think to myself that the medical profession was a bit like that not so many years ago. The condition of a patient was discussed in absolutely unfathomable terminology by his doctors and nurses, and he himself was the last one to know how it was going to be managed. That has changed, but in the water industry it has not changed.[56]

6.69 Obscure jargon and a lack of transparency in decision making often result in a lack of community understanding or interest in water management or conservation. According to the Bayside City Council:

> For most urban residents the hidden nature of plumbing means that there is little, if any, connection between the catchment and the tap or between the toilet and a wastewater outfall into Bass Strait.[57]

6.70 It is also the case that communities sometimes drive the reform process. The Committee saw an example of this where the Sullivans Creek Catchment Group has led an innovative plan to rehabilitate one of Canberra's inner city streams.

6.71 The CRC for Freshwater Ecology argues that community desires for environmental outcomes should drive decision-making on infrastructure:

> Urban planners have often not understood that the location and form of urban development has a serious impact on the health of the receiving waters. Both urban planners and the engineers designing infrastructure have often failed to appreciate that the community wishes for the health of the receiving waters determines the appropriate infrastructure, rather than some manual of best practice. The outcomes required must drive the community investment. There are interactions between the various elements of water management in urban communities and there are trade-offs that have often not been appropriately recognised by many of the single purpose solutions that have been adopted.[58]

6.72 Changing the way people use water and dispose of waste will involve significant changes to mindset and culture, without which, reforms are doomed to fail. As Ms Gilles told the Committee in Canberra:

> In terms of engaging people to change their individual behaviour, it is very important that the community get involved, and community groups are a good vehicle to engage the broader community to change their behaviour.[59]

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56 Mrs Simpson, *Proof Committee Hansard*, Brisbane, 4 April 2002, p 126; *see also* Sunshine Coast Environment Council, *Submission 17*, p 3.

57 Bayside City Council, *Submission 34*, p 5.

58 CRC for Freshwater Ecology, *Submission 52*, p 7.

59 Ms Gillies, *Proof Committee Hansard*, Canberra, 22 March 2002, p 56.

6.73 Water reform will also change the form and function of urban streetscapes. Best practice may mean changing drainage and guttering, installing rainwater tanks, creating less water-dependent gardens, using permeable surfaces, and installing wetlands and naturalised creeks instead of trapezoidal concrete drains. These changes will not always be understood or popular. The Committee heard how planners in Canberra,[60] Townsville[61] and Brisbane[62] have had to work at convincing local residents of the merits of naturalised creeks over neatly mown drainage courses, due to concerns about child safety, breeding of insects and snakes, and 'untidiness'.

6.74 People will also need to be convinced that expensive investment in gross pollutant traps, rehabilitation of creeks and similar projects is worth additional rates or taxes. The Mosman Municipal Council,[63] and Brisbane City Council were able to do this very effectively.

6.75 In order to implement best practice, changes will be needed in the law and in regulations at all three levels of government and political representatives are unlikely to pursue this agenda without the support of their electors.

6.76 A further advantage in enlisting community support is the wealth of detailed knowledge that local communities can provide to planners and researchers as well as the volunteer labour that is often required to carry out on-the-ground projects, such as planting and weeding.[64]

6.77 However, there are also limits to what communities can, or should be, expected to do. As Mr Humphries of the Water Corporation of WA told the Committee, the community cannot take over operational aspects of management:

> The community definitely has a very strong role in terms of defining the services and standard of drainage they want and their willingness to pay, but I do not think that you can put day-to-day operational management responsibilities on to unincorporated community groups who can only do it on the weekend. It simply will not work.[65]

6.78 It is clear that there must be a good working relationship between professional water managers and the communities they serve. As the Sullivans Creek Catchment Group argues, 'It is impossible for governments to achieve sustainable stormwater management alone'[66] It is important to ensure that community engagement occurs

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60 Ms Gilles, *Proof Committee Hansard*, Canberra, 22 March 2002, p 61.

61 Committee briefing, Townsville City Council, Townsville, 3 April 2002.

62 Committee briefing, Brisbane City Council, Brisbane, 5 April 2002.

63 Sydney NSW, where it created a Community Environment Contract.

64 Such volunteer work is the linchpin of the Natural Heritage Trust and the Landcare movement.

65 Dr Humphries, *Proof Committee Hansard*, Perth, 29 April 2002, p 427.

66 Sullivans Creek Catchment Group, *Submission 58A*, p 2.

early in the decision making,[67] and that the process is underpinned by a genuine commitment to communication, and not merely adherence to a procedure. As Mrs Simpson explained:

> there was a lack of genuine community consultation around the Moreton Bay area. There is what we call 'consulted to death' in Queensland, where you go through the motions but there no actual practical or observable outcomes as far as the community is concerned.[68]

Industry fragmentation

6.79 The water industry itself varies wildly in scale and resources, as well as in the populations it supplies and the geographical environments in which it supplies water. The Victorian Water Industry Association, describes the range of water businesses in its state:

> Yarra Valley Water with 198,000 megalitres of urban water supplied per annum – to, at the other end of the scale, Glenelg Water supplying 2,000 megalitres. So there are huge scale differences in the context of the types of businesses, presenting hugely different challenges for the various authorities[69]

6.80 Other variables include infrastructure concentration, water sources and rainfall. Lower density areas generally have much higher infrastructure costs than inner city suburbs, and an area that has large changes in elevation where gravity does much of the work may have lower pumping costs than flat areas. These and many other factors are illustrated by the Australian Water Association's *Australian Non Major Urban Water Utilities Performance Monitoring Report 1999-2000*, which sets out performance against a range of criteria.[70]

6.81 Mr Davis, Executive Director of the Australian Water Association argues for consolidation in the industry:

> there are 300 water utilities for a population of 20 million people and the rump of those utilities is very small so they are marginally able to survive economically, technically and in their environmental performance. If you were really brutal you would have to say that there should be a serious consolidation along the lines of what has happened in Victoria …[71]

6.82 The committee has some sympathy for this view given the range of pressures and cost drivers facing utilities around Australia and the associated variability in the

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67 Urban Hills Land Conservation District Committee, *Submission 19*, p 3.

68 Mr Baltais, *Proof Committee Hansard*, Brisbane, 4 April 2002, p 104.

69 Mr Harvey, *Proof Committee Hansard*, Melbourne, 23 April 2002, p 280.

70 *See also* the discussion of these figures: Mr Harvey, *Proof Committee Hansard*, Melbourne, 23 April 2002, pp 279-281.

71 Mr Davis, *Proof Committee Hansard*, Sydney, 18 April 2002, p 219.

resources, expertise and technical capacity of smaller utilities in particular to adopt best practice.

Fragmentation and the implications of the COAG reforms

6.83 One of the key drivers of institutional change in Australia since 1995, has been the COAG National Competition Policy reforms.

6.84 Historically, Australia's water authorities tended to be single, government owned entities – the Water Boards – that managed all aspects of water supply and wastewater. The COAG reforms triggered a restructuring of the public sector monopoly businesses, separating the policy, regulatory and service delivery functions,[72] – a process that has been substantially implemented around Australia.

6.85 This restructuring aimed to create competitive markets that would achieve a more efficient allocation of resources within the economy.[73] However, critics have suggested that in practice the reforms have increased the number of institutional players in the water industry, with all of the problems discussed above, further complicating the task of achieving integrated catchment based management. According to Professor Cullen, of the Cooperative Research Centre for Freshwater Ecology:

> The National Competition Policy with its separation of function and the outsourcing of key functions has exacerbated this fragmentation. It has led to serious loss of technical expertise in agencies. While the separation of purchasers and providers may have led to some economic benefits, it has also led to purchasers buying the wrong things because they lack the technical knowledge to assess what is available.[74]

6.86 Ms Gilles of the Sullivans Creek Catchment Group, also comments on the consequences of the multiplication of separate business units replacing a single public entity:

> governments are fragmented into business areas, and when you are trying to manage a landscape that makes it very difficult. So the planning, construction and maintenance management components are often separated – or in the ACT they are separated into different agency groups. Therefore there is a decreased ability for each agency to appreciate dependencies between the different areas and there is a decreased control over managing ecological systems across a catchment landscape …[75]

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72 For greater detail see attachments to National Competition Council, *Submission 13*.

73 Parliamentary Library, *Australia's National Competition Policy: its evolution and operation*, June 2001, p 2.

74 CRC for Freshwater Ecology, *Submission* 52, p 7.

75 Ms Gillies, *Proof Committee Hansard*, Canberra, 22 March 2002, p 57.

6.87 This can have practical consequences, where for example one agency does infrastructure planning and construction, and another is responsible for maintenance. The former agency may have little regard for the costs associated with maintenance. This is likely to detract from accurate life cycle costing, and hamper the efficiency of stormwater infrastructure such as gross pollutant traps.[76] As officers of Environment Australia comment on this point:

> Quite commonly, the people who construct the drainage systems are not necessarily those that operate or manage them or charge for those services; that is another fragmentation issue.[77]

6.88 Mr Trevor Daniell says COAG has also been responsible for stalling some aspects of ecologically sustainable management, absorbing enormous amounts of administrative time and resources to put in place the necessary new legislation and structures.[78]

6.89 COAG of course has its defenders. Mr Williams, of the Water Corporation in South Australia, endorses the splitting of the policy and service delivery functions,[79] and the President of the National Competition Council, Mr Samuel, writing in the AWA magazine, argues that:

> The resulting clarification of roles and responsibilities allows water providers to focus on their business and not face conflicting objectives or unclear goals, and there is better regulation by specialised and professional regulators.[80]

The implications of fragmentation

6.90 The provision of water services to urban regions is a complicated business involving complex relationships between many players, however the Committee has concluded that the extent of the fragmentation in Australia's urban water industry, is undermining the capacity of Australia to achieve genuine reform and sustainable urban water use.

6.91 The Committee acknowledges that there is good understanding and acceptance of the principles of sustainable water use, recycling, and water sensitive urban design within industry and government but the lack of take-up suggests that labyrinthine organisational arrangements, complex and often contradictory incentives,

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76 *Proof Committee Hansard, Canberra, 22 March 2002,* Ms Gillies, p 60; see also Prof Wong, *Proof Committee Hansard,* Melbourne, 23 April 2002, p 272.

77 Mr Bott, *Proof Committee Hansard,* Canberra, 22 March 2002, p 19.

78 Mr Daniell, *Proof Committee Hansard,* Adelaide, 30 April 2002, p 514.

79 Mr Williams, *Proof Committee Hansard,* Adelaide, 30 April 2002, p 485.

80 Graeme Samuel, Water, *Innovation in water: Case studies and special reports,* AWA, March 2002, p 107.

blocked communication channels, buck-passing between organisations, and conflicting agency agendas are the barriers to its implementation.[81]

6.92 It is clear that there is a gap between action and effect; cost and benefit; polluter and polluted; and power and responsibility. Agencies often end up working at cross purposes with each other, with one trying to fix problems created by another, and in the process wasting scarce resources. Mr Baltais in Brisbane, gave this example of Bushcare groups, funded by the Redland Shire Council:

> working on rehabilitating bushland areas under council control. They are very much aware that there has been a problem caused by council by allowing a developer in one area and then federal money being used to fix up that problem.[82]

6.93 Similarly:

> On one hand they have spent hundreds of thousands of dollars to put in things such as SQIDS in waterways, but on the other hand they are allowing poor building and development practices, which allow those waterways to be polluted. They are committing public money to fix a problem that could have been fixed by something like enforcement and proper development practices in regard to silt management and things of that nature.[83]

The problem of managing risk and liability

6.94 A significant obstacle to best practice systems is managing risk and liability associated with new technologies. New designs, equipment or techniques, must be approved by the local council, health and sometimes planning authorities which are obliged to satisfy themselves that they would not result in public health problems, pollution, flooding or damage to property, which may expose the authorities to political damage, criminal sanctions or civil liability. In the absence of standards, local authorities, particularly the smaller ones, are understandably cautious and conservative in approving unfamiliar systems and they may not have access to suitably trained technical expertise to do so.

6.95 In Melbourne, Mr Bartley explained that:

> there are engineering and health professionals who will have their own views but tend to be conservative about these things. We really need to push through some of these barriers and open it up so that industry – both

81 For discussion of these issues, see for example: Mr McRae, *Proof Committee Hansard*, Sydney, 18 April 2002, p 221; *and* Mr Rose, *Proof Committee Hansard*, Melbourne, 23 April 2002, p 325.

82 Mr Baltais, *Proof Committee Hansard*, Brisbane, 4 April 2002, p 105.

83 Mr Baltais, *Proof Committee Hansard*, Brisbane, 4 April 2002, p 107.

> manufacturers and developers and builders – can implement these systems with some confidence. At the moment there are no standards around.[84]

6.96 Mr Bartley gave this example, in relation to installing a greywater recycling system:

> you have to talk to the local council health inspector and get a permit. With all due respect to local council health inspectors, the problem is that, if you do that, they are going to look at you and say, 'What exactly are you doing? I have never seen this before. This all looks a bit dodgy. Where is the standard? Show me an EPA standard that establishes that you can do this.' And you cannot. You are not going to get over the baseline.[85]

6.97 Ms Gilles of the Sullivans Creek Catchment Group referred to the:

> apparent perception by developers of an increased liability in using these new approaches, because of the fact that it has not been specified exactly what these approaches are and what their maintenance requirements will be.[86]

Principles for system reform

6.98 Given these problems and the apparent need to reform regulatory and management arrangements for urban water, there are perhaps three principles which should guide that reform:

- prioritisation;
- total water cycle management; and
- local solutions.

Prioritisation

6.99 Mr McRae, of the Australian Water Association told the Committee that:

> The question could be asked where water fits on the scale of policy priorities for Australia and for the Commonwealth. Organisational structures, arguably, should reflect those priorities. You then manage for the extremities and the externalities afterwards. If water is an issue of critical import, then it is certainly worth evaluating that idea of whether or not there should be a single point of responsibility at the Commonwealth level to advise on water policy.[87]

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84 Mr Bartley, *Proof Committee Hansard*, Melbourne, 23 April 2002, p 314.

85 Mr Bartley, *Proof Committee Hansard*, Melbourne, 23 April 2002, p 316; *see also* Mr Bartley, *Submission 69*, p 4.

86 Ms Gillies, *Proof Committee Hansard*, Canberra, 22 March 2002, p 60.

87 Mr McRae, *Proof Committee Hansard*, Sydney, 18 April 2002, p 216. *See also* Dr Humphries, *Proof Committee Hansard, Perth, 29 April 2002*, p 415.

Total water cycle management

6.100 The concept of Total Catchment Management (TCM) or Integrated Catchment Management (ICM) is already well established and accepted in Australia. As Mr Boyden of the Stormwater Industry Association told the Committee, twenty-five years ago, no one bothered about what went downstream in NSW. Twenty years ago, awareness emerged of quantity issues, and in the last five years, awareness of quality.[88]

6.101 Although progress has been made in endorsing catchment based management, few places appear to have achieved it in practice. One of the few jurisdictions claiming to have done so is the ACT:

> the ACT has pioneered an integrated catchment approach to land use planning in a predominantly urban area, linking downstream water quality with land use management and guiding the city's layout from single block to city-wide consideration of stormwater. As a result, the ACT has instigated an integrated system of water supply, wastewater treatment, stormwater management and at-source controls which protect downstream waters, particularly the Murrumbidgee River, delivering water quality and flow regimes which approximate pre-development conditions.[89]

6.102 However, Professor Jones, Chief Executive of the CRC for Freshwater Ecology, also cautioned that this approach is frequently incorrectly applied:

> We hear a lot about the importance of taking an "integrated" approach to research and management. I find that, in practice, this means rivers and catchments are seen as a collection of numerous separate pieces that can be pulled apart, examined, then reassembled. Conceptually, holism is different from integration. With a holistic approach, you start to recognise that there are properties of river systems that only exist at the whole-of-river scale.[90]

6.103 The Committee strongly endorses the theory of TCM, and considers that it must form the basis for all future water management.

Local solutions

6.104 Australia's water institutions must reflect the diversity of conditions across Australia, including climate, rainfall patterns, consumption rates and population densities. The Stormwater Industry Association made this point to the Committee:

> the management of water is local. It should be local. … the funding mechanism and management mechanisms must be more closely related to

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88 Mr Boyden, *Proof Committee Hansard*, Sydney, 18 April 2002, p 163. *See also* Dr Essery, *Proof Committee Hansard,* Sydney, 18 April 2002, p 185.

89 Ms Fowler, *Proof Committee Hansard*, Canberra, 23 May 2002, p 546.

90 Professor Gary Jones, *WaterShed*, August 2002, p 2.

> the local effects in the state, catchment or local council area where the water falls.[91]

6.105 Mr Holdsworth from the City of Port Phillip, pointed to the:

> unique role that local government can have in achieving objectives – whether they be education, policy demonstration or implementation and enforcement – because local government is that much closer to its community and that much more able to understand the local situation, however you might describe it.[92]

6.106 Ecologically sustainable solutions to water use must be tailored to the particular circumstances and ecology of each place, right down to individual bays, waterways, and urban developments.

Institutional reform options

6.107 The necessity for integration was summed up by the Australian Water Association:

> There is growing recognition of the need to understand and proactively manage activities occurring within a catchment for the purpose of mitigating detrimental impacts to water resources. The difficult part of catchment management is *integrating* all of the relevant stakeholders and factors; water is affected in many ways, presenting a true management challenge.[93]

Institutional consolidation: centralising authority

6.108 A reduction in the number of agencies through amalgamation or rationalisation could produce a more unified administration that deals with all aspects of water treatment, better coordinates activities, and pursues shared objectives. Canberra and Brisbane have largely unified arrangements, which have been successful in implementing reforms that make them among the leaders in water management.

6.109 The Brisbane City Council, is the largest local government body in Australia and has charge of all water-related functions, unlike the smaller council areas elsewhere. Similarly, in the ACT, a single entity, ActewAGL, controls operations and maintenance of stormwater and road drainage on behalf of the Department of Urban Services.[94]

6.110 The Water Corporation of Western Australia discussed other advantages of larger scale:

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91 Mr Boyden, *Proof Committee Hansard*, Sydney, 18 April 2002, p 154; *see also* Prof Mein, *Proof Committee Hansard*, Melbourne, 23 April 2002, p 267.

92 Mr Holdsworth, *Proof Committee Hansard*, Melbourne, 23 April 2002, p 351.

93 Australian Water Association, *Submission 41*, p 5.

94 Mr Dymke, *Proof Committee Hansard*, Canberra, 23 May 2002, p 550.

> I think the advantage is that, in a geographically large state such as ours with small centres of population, you need to concentrate the expertise to manage such a large system and concentrate your scarce resources. So one of the advantages of being centralised and vertically integrated is that you can cover the whole state and deploy that scarce expertise in the best way possible; whereas, if you split it up or had a disintegrated system to manage the process, you would have duplication and not the best use of those scarce resources.[95]

6.111 In Western Australia, the Water Resources Commission has been merged with the Department of Environmental Protection to form the new Department of the Environment, Water and Catchment Protection,[96] and the separate portfolios of water resources minister and an environment minister have been brought together.[97] According to Mr Till, this consolidation may go further:

> We are looking at whether we should go down a regulatory path so that the regulation, the strategic planning and the overall management would reside in the new department. There would be a partnership arrangement between the regulator/strategic planner, the state government, and the local governments but the service delivery role would be entirely with the local government councils.[98]

6.112 Similarly, in South Australia, officials see the advantages of their new centralised department, which was three weeks old at the time of the Committee's hearings:

> Part of the advantage of establishing a department dedicated to water was that we were able to collaborate with and bring together sometimes fractious parties. We had a clear goal to manage water sustainably and effectively, whereas previously there was not a department that was dedicated in that way; it was previously attached to the Department of the Environment and we were probably seen as greenies. Then there was the engineering department, which built water supply systems, and there were some turf wars over that.[99]

6.113 In NSW:

> The Healthy Rivers Commission has looked at the Georges, Hawkesbury-Nepean and Woronora river systems and has recommended that a more integrated approach is needed for water management within the boundaries of those river systems, which is basically Sydney. They have recommended

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95 Mr Addison, *Proof Committee Hansard, Perth, 29 April 2002*, p 423.

96 Mr McCarthy, *Proof Committee Hansard, Perth, 29 April 2002*, p 408.

97 Dr Leybourne, *Proof Committee Hansard, Perth, 29 April 2002*, p 397.

98 Mr Till, *Proof Committee Hansard, Perth, 29 April 2002*, p 392.

99 Mr Wills, *Proof Committee Hansard*, Adelaide, 30 April 2002, p 459.

> that there is a need for a stormwater trunk drainage authority to move stormwater forward and integrate it into the water cycle.[100]

6.114 Dr Humphries of the Water Corporation of WA also indicated that there is:

> enormous enthusiasm to transfer to the Water Corporation the schemes that remain with local government and have them upgraded at broader community cost because the local community simply cannot afford them.[101]

6.115 There have also been suggestions for the consolidation of control at the Commonwealth level into a single agency, although as Mr Davis of the Australian Water Association explained, this would have both advantages and disadvantages:

> There is a campaign being waged in Canberra to try and encourage the establishment of an 'Office of Water', *a la* the Office of Oceans, but the current feeling is that water is just one of the natural resources that has to be managed … rather than splitting out water as a special case. Brian has a point in that you have AFFA and EA both managing water from different angles and, in some respects, having competition amongst the ministers, which is not really productive. I think a multi-departmental or bipartite team is tackling that in the national action plan, but there is a lack of attention and I am not sure that we can drag water out as a special case. It probably still belongs in with Natural Resources.[102]

6.116 The House of Representatives Standing Committee on Environment and Heritage report *Co-ordinating Catchment Management* recommended the creation of a national catchment management authority

> The Committee recommends that the Government work towards an agreement through COAG that requires each jurisdiction to enact complementary legislation to establish an independent statutory authority, the National Catchment Management Authority (NCMA). This authority should have a division corresponding to each of Australia's catchment systems …[103]

6.117 Dr Peter Dillon, from CSIRO Land and Water, argues for a national body or funding organisation dedicated to water reuse. The current fragmented and uncoordinated approach heightens the risks of a public health or environmental failure of a reuse project. Dr Dillon is concerned that a failure, especially in protecting public health, would seriously undermine the community's confidence in water reuse.[104]

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100 Ms Howe, *Proof Committee Hansard*, Sydney, 18 April 2002, p 179. *See also* Mr Davis, *Proof Committee Hansard*, Sydney, 18 April 2002, p 224.

101 Dr Humphries, *Proof Committee Hansard, Perth, 29 April 2002*, p 424.

102 Mr Davis, *Proof Committee Hansard*, Sydney, 18 April 2002, p 228.

103 House of Representatives, Standing Committee on Environment and Heritage, *Co-ordinating Catchment Management - Inquiry into catchment management* in February 2001, p xvi.

104 CSIROnline media release, *Call for national bid to save water*, 18 July 2002.

The lead authority

6.118 The Committee has seen that some of the most successful programs around Australia have been driven by the knowledge and commitment of one individual. The work of Sunshine Coast Environment Council, in association with the Australian Water Association has been ascribed to the efforts of Mrs Jennifer Simpson.[105] In Wide Bay, the expertise of Mr Tim Waldron, and his wide international experience, has been a driving force in the best practice programs developed by the Hervey Bay Council. The Committee was told that the ongoing support of Brisbane's Lord Mayor, Jim Soorley, has been fundamentally important in getting reform into place.

6.119 None of this should be taken to suggest that these individuals have been the sole contributor to these successes – they are clearly dependent on the hard work and commitment of many people. Nevertheless, this leadership is a key element in these examples of best practice.

6.120 The emergence of someone with the personal commitment to drive long term change can however be a matter of luck. The challenge is to find ways to institutionalise the champion phenomena, and the establishment of a lead or coordinator agency with direct political supervision and responsibility may be the best way to do this.

6.121 Options put to the Committee include the creation of an 'office of special projects' located in the Premier's Department, which can coordinate a whole of government approach focusing political support, and managing all aspects of the government approval process.[106] A similar concept has driven the creation of the Office of the Sydney Harbour Manager, who reports to a senior Cabinet Minister.[107]

6.122 Nationally, the creation of the new Natural Resources Management Council, comprising the key ministers at the state and federal levels, should better focus and coordinate government resources. As Mr Hooy explained:

> it is early days in the life of that ministerial council and a number of things are still shaking down. But what we are hoping to do there is to more holistically integrate the issues of natural resource management and, shall we say, issues arising from agricultural production, issues of legacy of history – such as vegetation clearance et cetera – with issues such as biodiversity conservation and environmental flows. In the past, they have been somewhat compartmentalised.[108]

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105 Mr Oliver, *Proof Committee Hansard*, Brisbane, 4 April 2002, p 132.

106 An example of this is the Strategic Projects Division of the NSW Premier's Department at: www.premiers.nsw.gov.au/about/spd/regional.htm

107 Sydney Harbour Management site, at: www.bearings.nsw.gov.au

108 Mr Hooy, *Proof Committee Hansard*, Canberra, 22 March 2002, p 8.

6.123 Mr Neil Head, of the Planning Institute of Australia suggested that this development could be further strengthened by including a program of national meetings of all planning and local government ministers,[109] noting the importance of planning laws and land use to water quality. He also recommends the creation of a unit within the Department of the Prime Minister and Cabinet to focus on the development of policies for sustainable cities.[110]

Sharing information

6.124 Sharing information is critical to achieving best practice and the peak national institutions play a crucial role in publishing materials and providing forums for discussions among professionals.

6.125 Mr Wiskar of the Queensland Environment Protection Agency commented that WaterWise was a good vehicle for disseminating information:

> One of the good things about people involved in water efficiency is that there is a very strong national network of people. In some part, WaterWise has had a role in enhancing the communication that goes on between various states about what they are doing. We are very involved in, say, the Sydney program and in programs that the Western Australian Water Authority have implemented and the research that they have done. Likewise, they are involved and learning from what we are doing.[111]

6.126 Mr Wiskar explains further:

> The way I would describe it is that there is an interested and passionate group of people within a range of agencies who are working together on these issues. It probably lacks at some level some formalised structures, but, on one hand, that is not all that important as long as the information gets shared, and ideas and learning can move forward.
>
> … The situation basically is that all states – bar South Australia – have adopted the WaterWise program. The basic principle of the WaterWise program is that information gets shared freely – ideas, brochures, materials, booklets, fact sheets or whatever it is. If you have got a water authority somewhere and you want to rebadge some of my material to use, then you freely have access, because you are part of WaterWise, to that artwork, materials, photos and whatever to do with as you will. But, likewise, if you do something that I want, you have got to give it to me so that I do not have to spend money doing stuff that you did and vice versa.[112]

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109 Mr Head, *Proof Committee Hansard*, Canberra, 22 March 2002, p 43.

110 Mr Head, *Proof Committee Hansard*, Canberra, 22 March 2002, p 40.

111 Mr Wiskar, *Proof Committee Hansard*, Brisbane, 4 April 2002, pp 140-141.

112 Mr Wiskar, *Proof Committee Hansard*, Brisbane, 4 April 2002, pp 145-6.

6.127 The newly launched Landcare Australia website[113] is an overall information resource, and includes twenty-eight regional landcare sites, a discussion forum, and case studies.

Partnership arrangements

6.128 Taking the information sharing approach one step further partnering can integrate the efforts and expertise of all levels of government, industry, science and the community. Each group contributes its own particular expertise, and solutions agreed to by the group take account of the priorities of all stakeholders. Collective planning and decision making can also shorten long periods of consultations and prevent the different players from working at cross purposes to each other.

6.129 The Committee has seen several outstanding examples of the effectiveness of this approach.

6.130 In Queensland, the Moreton Bay Waterways and Catchments Partnership was formed out of the Brisbane River Management Group and the Water Quality Management Strategy, as a cooperative arrangement including local governments and the Queensland Environment Protection Authority, and the departments of Primary Industries, Transport, Natural Resources and Mines. Funding comes from the state agencies and the local authorities that make contributions based on their populations. The Commonwealth has also funded particular projects through the Natural Heritage Trust.[114]

6.131 The partnership is said to be based on an overall planning vision for the region, underpinned by the fact that the receiving waters of Moreton Bay are a Ramsar listed site of international significance.[115]

> the partnership structure is somewhat Byzantine. However, there are all the elements of key involvement plus a recognition that there is a hierarchy of decision making that needs to be addressed. So we have an overall policy council. The interesting attribute of the policy council is that it is a mixture of state government, local government, community, industry and traditional owners. There is a cascade effect with input from a range of advisory committees and also a suite of specific issue-focused working groups that are strongly linked to the science team.[116]

113 Landcare Australia site, at: www.landcareaustralia.com.au

114 Ms Tarte, *Proof Committee Hansard*, Brisbane, 4 April 2002, p 95.

115 Ms Tarte, *Proof Committee Hansard*, Brisbane, 4 April 2002, p 88.

116 Ms Tarte, *Proof Committee Hansard*, Brisbane, 4 April 2002, p 88.

6.132 The partnership has produced a Waterways Management Plan, The Moreton Bay Catchment Scientific Report, the 'Crew Members Guide' and Healthy Waterways campaign implementation Programs.[117]

6.133 The Melbourne Association of Bayside Municipalities, comprising the ten councils around Port Phillip Bay, has developed a cooperative project to improve the quality of stormwater running into Port Phillip Bay.[118] The Port Phillip Coastal and Marine Planning Program (CMPP), funded under the Commonwealth Coasts and Clean Seas Program, aims to strengthen the local planning framework for all of the municipalities around the Bay, and integrate their management decisions into the overall strategy of the Victorian Coastal Strategy.

6.134 Through a Steering Committee, all main stakeholders were involved in the planning process, including the Victorian Department of Natural Resources and Environment, Department of Infrastructure, the Municipal Association of Victoria, and the Central Coastal Board.[119] Products of the partnership include a symposium and various training programs.

6.135 The Sydney Harbour model is an interesting way to manage institutional arrangements and is said to be:

> a new approach to managing complex places (and complex issues) which provides procedural clarity, equality of access to decision making, and maximises the possibility of achieving place-based outcomes.
>
> This form of governance – which we call the 'Sydney Harbour model' – rewards collaboration and encourages a strategic consensus on policy issues.
>
> It is characterised by enabling clusters of stakeholders and interest groups to develop joint positions and to then enter into a dialogue with the other main players. The 'Sydney Harbour model' is a network of clusters …[120]

6.136 These 'clusters' bring together state agencies, environmentalists, indigenous groups, and maritime users in both recreational and commercial fields. The model recognises formal structures and complex informal relationships; 'place based outcomes' and the fostering of community engagement.

6.137 In Canberra, the Sullivans Creek Catchment Group built a strong cooperative approach among community, business and government,[121] and formed a technical advisory committee comprising technical specialists from research institutions,

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117 South East Queensland Regional Water Quality Management Strategy, p 15.

118 Dr Johnstone, *Proof Committee Hansard*, Melbourne, 23 April 2002, p 303.

119 City of Port Phillip, *Submission 71*, Appendix 3.

120 http://www.bearings.nsw.gov.au/SHmodel.html (note that this website is no longer operative)

121 Sullivans Creek Catchment Management Plan 2000, List of stakeholders, pp 15-16.

government and community representatives.[122] A more specific collaboration was then formed to create a wetland along the main drainage route in partnership with the Natural Heritage Trust; the ACT government; the commercial housing developer; and Community Housing Canberra. Each member of the partnership offered resources to the project, including volunteer effort from Sullivans Creek Catchment Group members in planting and maintenance.[123]

6.138 Active engagement of the community has the benefit of delivering higher awareness of issues[124] and a preparedness on the part of the community to pay for programs to achieve environmental outcomes.[125] The Water Corporation of WA adopts another proactive method:

> we have regular and structured dialogue with the Western Australian Conservation Council. We part fund, jointly with the Water and Rivers Commission, a water policy officer at the council on the simple basis that the corporation is very willing to be either praised or criticised for its performance but that we would prefer it to be informed.[126]

6.139 It is also evident that effective management arrangements do not need to be based on either centralised agencies or formalised relationships. The ACT government explained the Canberra system:[127]

> While a range of government agencies have responsibilities which have an impact on water management, the critical factor is that there are strong partnerships and links between the different interests. That is why several of us are here today. In the ACT, responsibilities are as follows: Environment ACT has responsibility for resource management and environment protection, Urban Services for stormwater, Planning and Land Management for urban design, ACTEW Corporation for water supply and

122 Sullivans Creek Catchment Group, *Submission 58,* Attachment 2.

123 Ms Gillies, *Proof Committee Hansard*, Canberra, 22 March 2002, p 57. *See also* the example of Brisbane's western catchment implementation group: Ms Tarte, *Proof Committee Hansard*, Brisbane, 4 April 2002, p 100.

124 Such as the River Murray Urban Users Committee: Mr Charter, *Proof Committee Hansard*, Adelaide, 30 April 2002, p 487.

125 Such as the Community Environment Contract in Mosman (Committee Briefing, Mosman City Council, Sydney, Friday 18 April 2002. See Appendix 5). For other examples of communities that are prepared to pay more for environmental outcomes, see Mr Boyden, *Proof Committee Hansard,* Sydney, 18 April 2002, p 158; *and* Dr Essery, *Proof Committee Hansard*, Sydney, 18 April 2002, p 189.

126 Dr Humphries, *Proof Committee Hansard, Perth, 29 April 2002*, p 429.

127 ACT Government, *Submission 75*, p 3.

> sewerage services, Treasury for utility regulation and pricing, and Health and Community Care for regulating drinking water quality.[128]

Catchment Management Authorities (CMAs)

6.140 In bringing together stakeholders and developing catchment management plans, catchment management groups also play an important role in creating the layers of planning needed at national, state and local levels.

6.141 The powers and responsibilities of CMAs differ across jurisdictions,[129] but generally, they are limited to the preparation of Catchment Management Plans, and educative and catchment repair functions. Arguably, to be effective in protecting and repairing catchments, and ensuring water quality, CMAs must have control over land use planning within their areas, and the right to prosecute companies or individuals that cause damage to catchments or waterways.

6.142 As Chapter 7 discusses in detail, in most cases around Australia, prices of water do not include 'resource extraction' costs. CMAs could be given great effectiveness by allocating to them ownership of all water resources within a catchment. The CMA can then sell the water to irrigators, water companies or industries, at prices that reflect the actual management costs of the catchment. The Sydney Catchment Authority, established after the cryptosporidium outbreak in 1999, has gone some way towards this model:

> Its task is to manage and protect Sydney's catchments and supply bulk water to its customers, which include Sydney Water and a number of local councils.
>
> These customers then filter the water and distribute it to households, businesses and other users.[130]

6.143 In New Zealand water and environmental protection is a principal responsibility of the Regional Councils, which operate as a parallel level of government to Territorial Authorities.[131] However, this is limited as a model for Australia because Regional Council boundaries do not necessarily correspond with those of catchments.

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128 Ms Fowler, *Proof Committee Hansard*, Canberra, 23 May 2002, p 546. Note also the example of the PATHE (Partnership Advancing the Housing Environment) between the Housing Industry Association, Environment Australia and the Australian Greenhouse Office.

129 See Appendix 4 for details.

130 Sydney Catchment Authority website, at: www.sca.nsw.gov.au 'About SCA'.

131 Which creates a somewhat 'triangular' model of government with local and regional government having management responsibility for different aspects of what is essentially local government. This contrasts with Australia's three tiers in a linear arrangement. For further detail, see the Senate Environment, Communications, Information Technology and the Arts References Committee, *New Zealand/Australia Committee Exchange Program – Report of visit to New Zealand 15-17 April 2002*, p 4.

Conclusions and recommendations

6.144 Any institutional solution to urban water management will be complex and, as the CSIRO comments, there must always be awareness of the fundamental barriers to achieving truly integrated management:

> in trying to apply the concept of integrated urban water management, at least three obstacles will be met (Geldof, 1997), being:
>
> - the number of component parts is large and their interactions complex;
> - the information required to make sense of the complex system will be, in part, subjective; and
> - there will be uncertainty due to incomplete information.[132]

6.145 Melbourne Water offered similar comments about the complexity of future systems:

> The future will be quite different from the past in that we will be looking at an area of greater complexity. … We will be looking at government, regulators of both a technical and economic variety, developers – a whole range of people – to help support a sustainable future.[133]

6.146 The Committee considers there is significant scope for rationalising the number of institutions involved in water management and recommends that the Commonwealth government raise it as a matter for discussion at COAG. Typically, water supply and treatment is dominated by a relatively few, generally publicly owned, corporations, but stormwater management is highly fragmented. Reforms should address this fragmentation, and seek to integrate institutions that manage catchments, water supply and treatment, and stormwater. The experience of Victoria is indicative of some of the benefits. According to the Victorian Water Industry Association:

> the structure of the industry in Victoria is pretty good because of a change we went through in 1995. The provision of urban water, particularly in regional areas, was once the responsibility of small water boards, often attached to councils … Now, larger regional water providers are responsible for providing water and waste water services. I think that provides us with a far better opportunity, and it has been of great benefit to Victoria and to water authorities in Victoria in being able to provide for sustainable water management.[134]

6.147 An important part of this is the active inclusion of authorities responsible for receiving waters, such as environment protection agencies and the Great Barrier Reef

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132 CSIRO, *Submission 47*, p 34.

133 Mr Rose, *Proof Committee Hansard*, Melbourne, 23 April 2002, p 322.

134 Mr Harvey, *Proof Committee Hansard*, Melbourne, 23 April 2002, p 284.

Marine Park Authority, into the management framework. Stormwater and other diffuse source pollution will continue to be almost impossible for the EPAs to police so long as they do not have input into the planning and land use decision making.

6.148 The Committee also strongly endorses the role of institutional 'champions' or lead authorities. Governments at all levels should have mechanisms in place to identify ideas that will lead the way in achieving sustainability and provide dedicated support at the political and administrative level.

6.149 The experience of Mr Michael Mobbs in Sydney, discussed above, is instructive: he faced obstacles and delays in gaining official approval for aspects of his sustainable housing projects because he wanted to use new and unfamiliar techniques, and succeeded largely by reason of his experience as an environmental lawyer, and sheer persistence.[135] The Committee strongly believes that implementing best practice sustainable building and design should not be so difficult.

6.150 Further refining the role of the CMAs will also be crucial. CMAs should have overall legislated responsibility for the health of catchments, and the quality of the water within them, and flowing out of them. They must also be given the powers that accompany such responsibility. However, it is impossible to generalise about the exact roles of CMAs across Australia, or how their responsibilities would be shared with the existing responsible authorities, such as local government planning agencies, National Parks services, and state natural resources portfolios.

6.151 It also remains to be resolved whether there is a need for a national policy and coordinating authority, which would take responsibility for a National Water Policy and, crucially, work to resolve the problems in the relationships between the competing uses of water in Australia. The question is whether existing arrangements within the Department of Agriculture, Fisheries and Forestries, and Environment Australia are already sufficient; or whether a National Water Office or National Catchment Management Authority should be created. Creating a new bureaucratic organisation may complicate the regulatory landscape even further, unless it has a clear role and mandate. The recent creation of the new Ministerial Councils, and the Cabinet Committee is arguably of greater significance for focusing resources on water management issues.

6.152 As witnesses to the inquiry noted, there are also advantages in retaining an integrated natural resources management structure, rather than separating water. Running counter to this though, is the priority principle. Water is of such fundamental importance to Australia's cities and agriculture that it arguable deserves dedicated policy and management institutions.

6.153 The Committee concludes that in view of the urgency of reforming water management in Australia, both urban and rural, there is justification in establishing a National Water Office.

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135 *Sustainable House*, Michael Mobbs, CHOICE Books, 1998, p 135.

Legislative and policy solutions

6.154 There are seven principal areas in which the Commonwealth could act in improving the legislative and policy framework for better water management:

a) mandatory and enforceable water quality standards;

b) legislating to control land use and land clearing;

c) amending the *Commonwealth Environment Protection and Biodiversity Protection Act 1999*, to better deal with cumulative impacts;

d) stronger model planning provisions using the Building Code of Australia;

e) mandating the use of water efficient devices such as low flow shower heads;

f) mandating policies and standards; and

g) mandating environmental management system processes and triple bottom line reporting.

A National Water Policy

6.155 The NWQMS is a comprehensive and worthy exercise, that has produced an important set of national benchmark documents. However, the limitation of the Strategy is its failure to set the necessary aggressive and overall policy objectives that are needed to force the pace of change in Australia.

6.156 In this context, it is useful to look to the example of the National Oceans Policy, which sets in place a national framework for integrated ecosystem based management for the entire Australian marine environment. It contains both a vision and key management principles.[136]

6.157 The Committee, while commending the valuable policy work already done by the Commonwealth, considers that there is still a need for a National Water Policy, that, like the National Oceans Policy, clearly establishes goals and objectives for achieving ecologically sustainable water use in Australia, and embeds the underlying management principles to do this. Importantly, this policy should not be restricted to urban water policy, but should address the complex but still unresolved relationships between competing water uses across all Australian landscapes: rural, urban and industrial.

136 National Oceans Office website, at: http://www.oceans.gov.au/home.jsp

Mandatory standards for drinking water?

6.158 For many communities, especially those in rural areas, the quality of the domestic tap water is an issue.[137] The Australian Drinking Water Guidelines (ADWG) provide an authoritative source of information to Australians on what constitutes good quality, safe water.[138] It has been suggested that the Commonwealth government could move to make these guidelines mandatory, creating a legal obligation for all domestic water suppliers around Australia to supply water that meets the standards set out in the ADWG.

6.159 In its April 2000 report *Arrangements for Setting Water Quality Standards – International Benchmarking*, the Productivity Commission found that, by separating the creation of scientific standards from legal obligations, Australia's methods for setting standards were below best practice. Because the ADWGs are not legally binding, individual states and territories use a variety of instruments such as operating licences and memoranda of understanding, which determine how and to what extent the Guidelines are to be implemented.[139] This leads to considerable differences in regulation and water quality across Australia.

6.160 In contrast, the US has legally enforceable legislative standards developed by the National EPA using a detailed cost-benefit analysis.

6.161 Professor Bursill, who is the Chair of the NHMRC Drinking Water Review Coordinating Group reviewing the ADWG, argued strongly against this approach. According to Professor Bursill, there is a fundamental need to retain the distinction between voluntary guidelines and mandatory regulations:

> It is a very challenging and complex process to assess the scientific, toxicological, epidemiological and other health-related information available in order to derive guideline values that define good quality water. It is my view that it would be entirely counterproductive to attempt to introduce social, cultural, political economic and other factors in to the *Australian Drinking Water Guidelines*.
>
> There is an essential, legitimate, and in my view, entirely separate process involved in deriving water quality regulations (that is, standards) in the various jurisdictions in Australia. It is this latter activity where cost-benefit trade-offs are made. Consequently, this needs to be transparent to the communities affected by the eventual decisions.

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137 *See for example*, West Australian, *Water in towns below par*, 15 June 2002, p 3; *and* The Examiner, *Water worry; Warnings to boil in 37 State areas*, 16 June 2001, p 1. Note also the discussion of salinity threats to urban water supplies in Chapter 2.

138 CRC for Catchment Hydrology, *Submission 25*, p 5.

139 Productivity Commission 2000, *Arrangements for Setting Drinking Water Standards*, International Benchmarking, AusInfo, Canberra, p xxvi.

> In some other countries, such as the United States, the above two processes are really combined into one. The result is often neither a good guideline nor a good standard.[140]

6.162 During the Committee's hearings in Adelaide, Professor Bursill gave a practical example of this point, relating to the salinity levels in drinking water, which according to the ADWG should be below 500 mg per litre. Between 500 and 1,000 is still acceptable from a health perspective, but people can taste salt in the water once it goes above 500:

> You can have a debate whether Perth people want to desalinate their water because it is often up in the 600 to 700 milligrams per litre over there, especially with this extended dry period they are having. The implementation of desalination would probably double the price of their water at the present time. It certainly would not make any difference to the health outcomes, and it would only make relatively minor impacts on even the aesthetics at the current level it is at.[141]

6.163 This view is supported by the CSIRO:

> The regulation of drinking water quality in Australia is the responsibility of the states and, in particular, the state health authorities. It is their role to set up acceptable standards for the quality of water supply and to oversee the processes which are put in place to deliver such water. Clearly, the ADWG provide a benchmark in this area, but it would be a mistake and a misunderstanding of the intent of the ADWG to simply translate the water quality numbers contained therein directly into operating standards. Indeed the ADWG document itself goes to considerable length to emphasise the importance of local conditions and community consultation in arriving at such standards.[142]

6.164 The Committee agrees that it is preferable to retain the separation of setting scientifically based guidelines, and enforceable standards.

Legislating land use

6.165 Australians have a strong preference for living close to water, whether it be next to the sea, rivers, or lakes, and housing developers are quick to take advantage of this market preference. However, developments in these areas often result in the destruction of wetlands and riparian vegetation, which have acted as purifying mechanisms for water flows. Building on river flats also brings the need for flood

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140 CRC for Water Quality and Treatment, *Submission 25*, p 4.

141 Prof Bursill, *Proof Committee Hansard*, Adelaide, 30 April, 2002, p 533.

142 CSIRO, *Submission 47*, p 73.

mitigation works which often further damage natural systems and increase erosion in waterways.[143]

6.166 As the Wildlife Preservation Society of Queensland submission argues:

> Government authorities continue to allow development within flood prone areas, floodplains and natural drainage lines. Such areas are important for their aesthetic and ecological values, and assist in the natural treatment of stormwater. There has been a failure to learn from past and recent events, resulting in loss of public and private property and environmental harm.
>
> … Local authorities are allowing ecologically unsustainable development within catchments, resulting in vegetation clearance and subsequent destruction of natural systems appropriate to the treatment of stormwater and water flows and adding further pollution and increased flow rates into the remaining ecosystem.[144]

6.167 Mr Hill notes his concerns over:

> The very poor response to developing legislation or using what we have to adequately protect wetland basins, flats and channels and their foreshores…, [and] with the absence of a legislative framework to require best practice water management as a prevention rather than cure approach.[145]

6.168 Such clearing of vegetation continues in the Perth region, according to the Urban Hills Land Conservation District Committee:

> Of most concern has been the loss of very high biodiversity wetlands in Perth and the South West region of Western Australia. These wetlands have been aptly described as the kidneys of the catchment. Their nutrient stripping effectiveness was demonstrated by Paul Lavery on the Peel Harvey wetlands area named the Spectacles.
>
> … Recent State Regional Planning Schemes in all of the above areas are giving low priority to wetland protection eg Peel Harvey and Greater Bunbury Region Schemes, missing the opportunity to protect wetlands at a low price for the Community.
>
> Development has not been limited to the most degraded wetlands but has been allowed to continue on wetlands from outstanding condition wetland types to totally cleared and degraded wetlands.[146]

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143 Mr Alan Hill, *Submission 24A*, p 10. *See also* CRC for Catchment Hydrology, *Submission 25*, p 2.

144 Wildlife Preservation Society of Queensland, *Submission 7*, p 2.

145 Mr Alan Hill, *Submission 24*, p 2.

146 Urban Hills Land Conservation District Committee, *Submission 19*, p 1.

6.169 The solution to this problem is essentially to create planning laws that prevent urban developments in these areas. The Committee recognises that planning laws are the jurisdiction of state and local governments and urges state and territory governments to work with local government in undertaking an urgent review of these laws, coupled with the necessary mapping of remaining wetland and riverine areas to ensure proper protection of wetlands and water courses.

Cumulative damage and the Commonwealth EPBC Act

6.170 It has been put to the Committee that the EPBC Act is limited by the fact that it will tend not to be triggered by the cumulative changes of numerous small projects over a period of time. As officers of the Commonwealth government explained:

> the EPBC Act was not put in place fundamentally to deal with cumulative impacts or diffuse source pollution. The triggers within it are somewhat limiting to the point where actions which could impair or adversely affect a nationally environmentally significant waterway are not direct triggers. So it has to have a demonstrable impact on a World Heritage listed area like the reef.[147]
>
> … The key words there are 'an action' and 'a significant impact'. There is no doubt there are problems with cumulative impacts – that is something we have to deal with. …
>
> Hypothetically, if a Ramsar site is downstream from a major housing development and that development was going to have a significant impact then there is a potential for the act to be triggered. The issue …. is the gradual expansion over time of a suburb around a particular site. That is more a planning issue than a straight guillotine decision.[148]

6.171 The Great Barrier Reef Marine Park Authority gives further detail of this problem, noting that it has been involved with the assessment of 23 such developments in the past two years:[149]

> This method of staging development submissions where assessment is done on each stage is clearly inconsistent with the intent of both the [Queensland planning legislation and the EPBC] however, neither legislation encourages or requires a consolidated approach.[150]

147 Mr Bott, *Proof Committee Hansard*, Canberra, 22 March 2002, p 17.

148 Mr Hooy, *Proof Committee Hansard*, Canberra, 22 March 2002, p 17.

149 Details of which were provided to the Committee on a 'commercial in confidence' basis.

150 Great Barrier Reef Marine Park Authority, *Submission 60A*, p 2.

6.172 Furthermore:

> [M]uch work is undertaken both by government and the proponent before there is any indication that the proposed development may not be appropriate.[151]

6.173 The Committee considers this to be a serious flaw in the current Commonwealth regime. It is arguable that the existing broad definition of 'action' in the EPBC Act, which includes 'an activity or series of activities',[152] already covers cumulative impacts, however it would appear from the evidence received that the Department does not currently interpret the Act in this way. This problem deserves immediate clarification, particularly in view of the serious threats facing the Great Barrier Reef from land-based pollution. Solutions could include an amendment to the definition of 'action' to explicitly include cumulative activities or projects, linked to a more assertive use of the EPBC Act by the Commonwealth to ensure proper environmental impact assessment of any projects that through cumulative impacts, could harm areas that have National Environmental Significance.[153]

Model planning laws and codes

6.174 There are different building, planning and zoning laws across the States, Territories and more than 700 local governments. According to the Housing Industry Association, this is the principal barrier to rapid implementation of best practice:

> Scores of planning jurisdictions around the country have acted unilaterally to develop their own versions of energy efficiency codes for residential building at the cost of:
>
> - unpredictable results across local government boundaries;
> - wastage of resources through the reinvention of the codes in each jurisdiction;
> - no regard for the impacts of the codes in the affordability of homes; and
> - complex and rigid rules that are not universally applicable.[154]

6.175 It has been suggested to the Committee that a suitable vehicle for regulating best practice water efficiency is the Building Code of Australia. The Building Code of Australia (BCA) is produced as a model national set of design rules, which has been adopted into building regulation by all States and Territories. The BCA is a

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151 Great Barrier Reef Marine Park Authority, *Submission 60A*, p 2.

152 Environment Protection and Biodiversity Conservation Act, subsections 523(d and e).

153 Note that the Minister for the Environment is still able to grant a declaration under Division 2 to exempt an action from the approval process.

154 Housing Industry Association, *Submission 59*, p 4.

performance based standard which established a set of objectives, functional statements, performance requirements and certain compulsory specific rules.[155]

6.176 The Australian Greenhouse Office identified the BCA as the natural place to address minimum energy requirements for new buildings and major refurbishments and, in association with the building sector, has moved to incorporate national energy efficiency performance standards into the Code.[156]

6.177 Melbourne Water,[157] South Australian government officials,[158] and the Housing Industry of Australia[159] all support the idea of a wider role for the BCA, especially in achieving consistency across Australia.

6.178 Another alternative is the Plumbing Code of Australia (PCA), which was developed by the National Plumbing Regulators Forum, and is currently in draft form. The development of the PCA was driven by the findings of several reports, which highlighted the disparities between the regulatory regimes between the various States and Territories. The draft PCA includes installation requirements for on site plumbing services and systems, and processes for certification and authorisation of plumbing products.[160]

6.179 Both the building and plumbing codes offer significant opportunities to ensure the institutionalisation of water efficient building practices. Accordingly, the Commonwealth should sponsor negotiations to strengthen the Codes, and consider giving them legislated pre-eminence over other conflicting rules.

6.180 Two issues would need to be addressed in formulating these model codes. First, there is a danger that the negotiation process would result in a lowest common denominator standard, which might undermine best practice.

6.181 Second, the enormous diversity of Australia's climatic conditions, would pose practical difficulties in standardising planning laws:

> traditionally that has been the domain of the states. They provide the licensing regimes, the regulation regimes and what have you. Whilst the Commonwealth could, and has been seeking to, facilitate the whole area of water reuse and appropriate direction of stormwater, we really cannot unilaterally move into that area without the states' complete agreement. As

155 About the Building Code, BCA Board site,at: www.bcab.gov.au

156 Australian Greenhouse Office website, at: http://www.greenhouse.gov.au/energyefficiency/building/code.html *see also*: Department of Agriculture, Fisheries, Forestry−Australia and Environment Australia, *Submission 54*A, Attachment C.

157 Melbourne Water, *Submission 46*, p 5.

158 Mr Wills, *Proof Committee Hansard*, Adelaide, 30 April, 2002, p 466.

159 Housing Industry Association, *Submission* 59, p 4.

160 Regulatory Impact Statement – Plumbing Code of Australia, p 3.

> I said, they have the regulatory inspection regimes and what have you, and we really would need to bring them on board.[161]

> It is also the simple matter of the use of the term 'standard' as well. Standardising those sorts of technologies nationally may not be practical. For operational reasons, you may have low mains pressure and not be able to use a low-flow showerhead, for example. Although the notion is supported, there would need to be a degree of flexibility within that system so that you could customise what you were using in any specific location.[162]

Mandating equipment

6.182 One option for government is to legislate to either require the use of water efficient appliances or prohibit the sale of appliances deemed to be wasteful. The Commonwealth arguably has the power to regulate at the point of sale under its corporations powers, and such laws could extend to dual flush toilets, low flow shower heads, or aerated taps.

6.183 This approach has the advantage of immediate effect across all new building developments, without the patchy take-up of voluntary schemes. There are other advantages in only allowing water-efficient devices on the market. Mr Bartley explained to the Committee how:

> Dual-flush toilets came in about 15 or 20 years ago. They were an option which some builders or architects or home owners might adopt, and it took us some years for them to be mandated. Once they were mandated, the manufacturers could make them on a mass-produced basis and they became the standard, and everybody uses them.[163]

6.184 This view was echoed by Mr Wiskar of the Queensland EPA:

> A critical mass of local governments adopted it and then the industry responded by saying, 'Given that X number of local governments are enforcing this, we are now not going to make … single-flush systems any more. The regulation forced industry transformation …[164]

6.185 Adoption of a national regulation at point of sale for water efficient appliances was recommended by both Sydney Water and the Brisbane City Council.[165]

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161 Mr Hooy *Proof Committee Hansard*, Canberra, 23 May, 2002, p 593.

162 Mr Bott, *Proof Committee Hansard*, Canberra, 23 May, 2002, p 593.

163 Mr Bartley, *Proof Committee Hansard*, Melbourne, 23 April 2002, p 313. *See also* Mr Rose, *Proof Committee Hansard*, Melbourne, 23 April 2002, p 322.

164 Mr Wiskar, *Proof Committee Hansard*, Brisbane, 4 April 2002, p 135.

165 Mr Gellibrand, *Proof Committee Hansard*, Sydney, 18 April 2002, p 170; *and* Brisbane City Council, *Submission 28*, p 2.

6.186 Conversely though, the Planning Institute of Australia submission noted that mandating any particular solution can have the effect of embedding out-of-date technology:

> Best practice in three years' time with urban water management and water sensitive urban design, is likely to be different to today …[166]

6.187 Regulations should also avoid creating standards that do not keep pace with technological advances in best practice.

6.188 However, the Committee is also mindful that there can be technical difficulties in using some of these appliances, such as low flow shower heads with the low pressure that comes with instantaneous gas hot water, or for some older fittings.

Mandating outcomes – policies and standards

6.189 Performance based standards which prescribe an outcome and do not attempt to impose any particular method to achieve that outcome have the advantage of enabling a range of approaches to be adopted to meet the standards, encouraging innovation and adaptation to the needs of local conditions. These standards can be progressively tightened over time and reflect outcomes offered by emerging technology.

6.190 This approach has been a standard tool of pollution controls. Environment Protection Agencies impose licence conditions on companies governing the levels of pollutants that can be released. Over several decades, this has resulted in considerable gains in water quality particularly in relation to point source pollution. As Mr Bott of Environment Australia points out:

> Most of the toxicants, being industrial in origin, have been regulated to some extent over a protracted time through state legislation, most of the states having had environmental legislation come into being in the seventies or early eighties. So there has been 10 to 20 years of regulation of industry. A lot of the dominant sources have now been brought under control through licensing or have phased reduction programs in place.[167]

6.191 The Committee notes that the Great Barrier Reef Marine Park Authority has adopted this method to improve water quality. From 1993, the Authority stipulated that all sewage discharges from islands within the Marine Park had to be of tertiary standard, coupled with the application of an environmental management fee for discharge. A review in March this year showed that most discharges are now fully compliant. The EPA in Queensland is working closely with GBRMPA and has

166 Planning Institute of Australia, *Submission 61*, p 3.

167 Mr Bott, *Proof Committee Hansard*, Canberra, 22 March 2002, p 4.

upgraded its licence requirements for most of its coastal facilities to tertiary standard by 2008.[168]

6.192 According to the CSIRO, regulation of itself will not be effective unless supported by credible enforcement policies, with compliance monitoring, prosecutions and appropriate penalties:

> There is a considerable body of evidence to suggest that restriction policies are effective. However, Nancarrow, et al (1996) found that the effectiveness of such policies declined once the sense of 'crisis' has passed. That is, use of restriction policies without enforcement and penalties on a permanent basis may prove ineffective.[169]

6.193 Finally, standard setting is often not effective at addressing diffuse sources of pollution.

6.194 However, there are several opportunities for setting tighter standards, including:

- requiring all appliances sold in Australia to comply with stipulated water efficiency guidelines;[170]
- mandating minimum water efficiency standards for all new buildings and developments; and
- including water consumption targets in operating licences for businesses.[171]

Mandating process

6.195 An alternative to mandating standards of equipment or outcomes is to mandate the decision making or planning process.

6.196 This concept has application to urban water management and water quality in relation to water utilities and businesses involved in building construction and facilities management, but has not generally been applicable to individual domestic residences. The concept can be applied in two ways – Environmental Management Systems (EMS), and triple bottom line reporting.

Environmental Management Systems (EMS)

6.197 An EMS is based on the 'continuous improvement model', establishing environmental objectives (which at a minimum should comply with legal requirements), determining how these are to be met and regularly reviewing the effectiveness of actions to meet these targets. Features of this approach include:

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168 Mrs Morris, *Proof Committee Hansard*, Townsville 3 April, 2002, p 67.

169 CSIRO, *Submission 47*, p 40.

170 Australian Conservation Foundation, *Submission 68*, p 8.

171 Melbourne Water, *Submission 46*, p 5.

documenting a process; articulating objectives; allocating responsibilities for compliance; communicating these requirements to staff with associated training; and developing emergency contingency plans.

6.198 Companies can seek accreditation of formal standards such as the Environment Management Standard ISO 14001 published by Standards Australia.[172]

6.199 Sydney Water is currently developing a corporation wide EMS, and points out that EMS ensures that environmental management processes are consistent, within a flexible framework.[173]

6.200 This process approach requires those at the 'coalface' of business operations to actively consider environmental outcomes in their planning process and operations, whilst allowing them the flexibility to design solutions that are relevant to their particular circumstances.

6.201 A further advantage is that creating systems to prevent problems occurring is both cheaper and more effective that attempting to police problems after they occur. As the previous section discussed, enforcement action is often impractical where there are diffuse sources of pollution or sedimentary runoff (such as, for example, from building sites). A well designed process will set up a sequence of measures to ensure that problems do not occur.[174]

6.202 As Mr Crocket of Environment Business Australia commented in relation to EMS:

> Environmental management systems … including triple bottom line reporting [–] provided they are an integral part of business and quality management systems [–] have already had and will continue to have an effect of causing a rapid advance in identifying problems and solutions in the urban water sector.[175]

6.203 The Committee also notes the development of the National Water Quality Management Framework will aims to reduce the emphasis on simple water quality numbers contained within the existing ADWG, and instead place more emphasis on the quality assurance processes.[176]

6.204 While the use of environmental management systems have their strengths, they mandate a process, not a result. Therefore, a company may implement a range of good processes, but these might fail or set goals that are not best practice or are environmentally inappropriate which means they should not replace fixed standards.

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172 Standards Australia site, at: www.standards.com.au

173 Sydney Water, *Submission 45*, p 20.

174 *Proof Committee Hansard, Canberra, 22 March 2002,* Mr Bott, p 6.

175 Mr Crockett, *Proof Committee Hansard,* Canberra, 23 May 2002, p 575.

176 CSIRO, *Submission 47,* p 74.

6.205 Finally, the process of developing and certifying an EMS is time consuming and expensive and less likely to be done by the smaller companies who are currently difficult to police anyway. One solution to this is to legally require certification, however this would be profoundly unpopular within the business community. An alternative is to require or encourage businesses to become compliant with standards such as the ISO 14001, without requiring accreditation.

Triple bottom line reporting

6.206 There is also scope to improve best practice water efficiency and protection against pollution of waters through Triple Bottom Line (TBL) reporting. Under these rules, a company must include information in its corporate accounts addressing its performance against not only financial, but social and environmental criteria.

6.207 Water use and management would be one element of general measures of environmental sustainability, and this is already becoming widespread:

> The Victorian government … has set triple bottom line thinking as an important element of all government business enterprises. This element is, to my way of thinking, particularly important in the context of the water industry, because of the nature of the resource that we are dealing with, its importance to society and its value to all Victorians.[177]

6.208 The Victorian Water Industry Association (VicWater) is about to publish a reporting guideline for water businesses and it explained the advantages of the process:

> once you are reporting on the triple bottom line … it starts to infiltrate your thinking further up and your policy making and decision making when you are making business planning decisions on where you are going to commit resources and what activities you are going to carry out.[178]

6.209 The central advantage of these process systems is therefore that they place the environment, and in this case water, squarely in the heart of business planning and accountability. Mr Daniell sees this as fundamental to future sustainability:

> At the moment, there is no process in the planning system that allows this. … There are very few companies around that are marking sustainability or triple bottom line reporting the essence of their planning cycle. It will happen and it will happen in the next five years.[179]

6.210 It is likely though that this process will only occur if it is required by legislation. Currently the *Corporations Act 2001* requires Directors to include in the Annual Report details of the entity's performance in relation to environmental

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177 Mr Harvey, *Proof Committee Hansard*, Melbourne, 23 April 2002, p 280.

178 Mr Harvey, *Proof Committee Hansard*, Melbourne, 23 April 2002, p 285.

179 Mr Daniell, *Proof Committee Hansard*, Adelaide, 30 April 2002, p 502.

regulation if the entity's operations are subject to any particular and significant environmental regulation under a law of the Commonwealth or of a State or Territory.[180] The Committee notes that, notwithstanding these limited environmental reporting requirements, voluntary take-up rates of TBL reporting have been quite small. A recent Westpac Investment Management survey of S&P ASX200 companies, found that 91 per cent of companies have not made public statements committing to greenhouse gas reductions; only 16 per cent participate in energy reduction schemes, and only 6 per cent are reducing greenhouse gas emissions below Kyoto targets.[181]

6.211 The Committee considers that if Australian companies are to operate in a sustainable way, it is fundamental that this reporting performance be improved.

Enforcement of legal standards

6.212 A common criticism of many of the laws relating to water pollution, and environmental protection laws generally, is that government enforcement agencies rarely prosecute. As Mr Diprose told the Committee:

> We have the potential to use best management practices, but because nobody actually checks, nobody regulates and nobody is responsible, it is not always being done.[182]

6.213 The key areas for enforcement are: discharges of pollutants from industrial sources, release of untreated sewage from utilities, failure to comply with sediment control measures at building and construction sites, breaches of the laws relating to activities within catchments, domestic use of water for garden watering, hosing down driveways, and washing of cars where it is contrary to local laws; and failure to comply with planning laws.[183]

6.214 Several witnesses drew the Committee's attention to this lack of enforcement action. Mr Baltais of the Wildlife Preservation Society of Queensland, gave the Committee a number of examples in the Brisbane region where laws appear not to have been monitored or enforced by regulatory authorities.[184]

> the developer goes off and does what he wants because in most cases he is not being monitored. The state government legislation is certainly not enforced in developments, and there are plenty of examples. I could take you to today and show you umpteen building and development sites where

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180 *Corporations Act 2001*, Section 299 – Annual Directors Report – General Information.

181 Weekend Australian, *Greedy times cry out for more stickybeak shareholders*, 20 July 2002 p 33.

182 Mr Diprose, *Proof Committee Hansard*, Melbourne, 23 April 2002, p 374.

183 These are prohibited in some jurisdictions, usually by local temporary water restrictions.

184 Wildlife Preservation Society of Queensland, *Submission* 7a, generally, *but see for example* p 14.

> there is either no silt management or very rudimentary silt management in place. It is a piecemeal approach. It is delegated down to the developer or to the builder to do the right thing rather than strategically looking at, 'How does this all fit together and how do we manage it?' from construction right through to ongoing management.[185]

6.215 According to Melbourne Water:

> Public policy directions in recent years have sought solutions in self-regulation by industries, backed up by accreditation of approved management systems. There is no evidence that these approaches are working, with large numbers of small operators working in generally unsupervised conditions where there is little chance of being caught for violating the regulations.[186]

6.216 In Western Australia, the Eastern Metropolitan Regional Council commented on the lack of licensing or regulation of small industrial operations, which cumulatively, have a major impact. These companies:

> depending on what they are, are not licensed by the DEP, therefore they are not inspected and there is no regular environmental audit done of those industries. There has been a project through the Swan River Trust to establish a working group of local governments to do that. That group did a survey in 1997-98 which indicated that there certainly were causes for concern.[187]

6.217 In Tasmania, a recent Auditor General's report found a pattern of lenient treatment of private companies for environmental offences, with only seven companies prosecuted since the 1997 inception of the Environment and Pollution Control Act.[188] Similarly, Mr Hahn cites the example of Spring Creek in the NSW Shire of Campbelltown. He claims that neither Council nor the EPA have responded to complaints made about rubbish in the creek system.[189]

6.218 There are several reasons for this problem.

6.219 Effective monitoring of building sites, road construction areas, waterways and industrial facilities is costly, requiring enough officials to patrol and investigate all complaints and incidents. If the matter is to be prosecuted it will be necessary to hold a formal investigation to compile evidence, which for environmental offences may also include scientific testing to determine the origin of pollutants. Legal action may last for several years.

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185 Mr Baltais, *Proof Committee Hansard*, Brisbane, 4 April 2002, p 108.

186 Melbourne Water, *Submission 46*, p 10.

187 Mr Ryan, *Proof Committee Hansard, Perth, 29 April 2002*, p 412.

188 Mercury, *Law 'too soft' on polluters*, 20 Jun 2002, p 6.

189 Mr Hahn, *Submission 39*, pp 1-2.

6.220 Many agencies, especially at the local government level, will not have the staff, financial or legal resources to effectively police all of their laws.[190] Accordingly, many agencies will only prosecute major and flagrant breaches of the law. As Councillor Johnstone of the City of Port Phillip in Victoria explained:

> Enforcement action generally is costly for councils. It is difficult and it has limited success. Often a final conviction is like a little tap over the knuckles, so you have to question whether that is the best use of our resources.[191]

6.221 In the case of diffuse source pollution, enforcement action is not the most effective way to achieve compliance with best practice. As Mr Campin of the Queensland EPA told the Committee:

> there are obviously regulated sites like sewage treatment plants where we have strong control and more than enough resources to deal with that. But then there is also the issue of diffuse point source pollution and that tends not to be an area where there is regulation. It is more a case of putting in place planning instruments …
>
> If we go down the street here, there is obviously run-off off the road that potentially ends up in the creek. You can deal with that by setting in place guidelines with Brisbane City Council about how they manage that stormwater, but it is obviously fairly difficult to regulate because the stormwater can enter the river from all sorts of places whereas in terms of the sewage treatment plant and what it discharges it is obviously very easy to set up a regulatory system and for us to then effectively resource that.[192]

6.222 Mr Bott of Environment Australia voiced a similar view:

> broad scale urban development, management and regulation of the emissions from those activities generally slip between traditional land and water regulation responsibilities. … You cannot regulate a household. You cannot regulate a down water pipe off a roof or off a hard surface. This is not just unique to urban development but also to agriculture, in a peri-urban sense. Those emissions are often sporadic and, as the name suggests, diffuse. There is no point of discharge often. It makes regulation and management of those discharges quite difficult.[193]

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190 See for example Henley & Grange Residents Association, *Submission 14*, p 4 in relation to the SA Environment Protection Agency; and the comments at: Mr Baltais, *Proof Committee Hansard*, Brisbane, 4 April 2002, p 111.

191 Cr Johnstone, *Proof Committee Hansard*, Melbourne, 23 April 2002, p 361.

192 Mr Wiskar, *Proof Committee Hansard*, Brisbane, 4 April 2002, p 137.

193 Mr Bott, *Proof Committee Hansard*, Canberra, 22 March 2002, p 6.

6.223 Obviously, the most effective way to prevent harm is through programs that develop management practices that prevent the pollution in the first place.[194]

6.224 A cooperative approach that seeks to achieve good working relationships with industry, encouraging it to voluntarily report incidents, and work with the agency in managing bad practice may be more effective and less costly. The Melbourne Water submission, for example, explains that:

> Another important feature of the Victorian system is the way EPA Victoria works with potential polluters in a non-adversarial way. The EPA defaults to punitive measures only as a last resort. Melbourne Water supports this approach and believes that this leads to the best long-term outcomes.[195]

6.225 Another reason for not taking action was advanced by officers of the Commonwealth government:

> You can have all the regulations but in some cases they are not being enforced. They are not being enforced because they are a threat to industry and employment, especially in some of the states that are struggling economically.[196]

6.226 Mr Baltais also commented on this issue:

> I would not say that councils are working with the developer as such, but they seem to be more concerned about how the development goes ahead. Right up to the approval process they will go through all the motions of looking at environmental issues and approve the development but, once the approval has been given, the follow-up monitoring of those conditions that have been applied to that development is not done, in general. They go through the motions of applying these conditions—and some of them are very good—but putting them into practice does not seem to happen.[197]

6.227 Where this occurs, it is likely to undermine those companies that do spend resources on achieving best practice. It also undermines the market for newer, more expensive technology. This issue was raised by Dr Vivian Robinson:

> We continually hear from potential customers that they know appropriate legislation exists, but nobody enforces it, so why should they worry. … the Environment Protection Agency (EPA) is not prepared to act against any but the most severe polluters because of fear of causing unemployment.[198]

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194 This point was made by officers of the Great Barrier Reef Marine Park Authority in relation to diffuse source pollutants into the reef area. Mr Yorkston, *Proof Committee Hansard*, Townsville, 3 April 2002, p 75

195 Melbourne Water, *Submission 46*, p 8.

196 Mr Reynolds, *Proof Committee Hansard*, Canberra, 22 March 2002, p 12.

197 Mr Baltais, *Proof Committee Hansard*, Brisbane, 4 April 2002, p 110.

198 Electropure Industrial Australia, *Submission 77*, p 2.

6.228 The Committee has also seen evidence of agencies enforcing their laws. This example was given by the WA Water and Rivers Commission:

> We had a successful prosecution against somebody who illegally cleared a conservation category wetland a couple of months ago. It was a test case; it was the first one of its kind. We are hoping that that will be some deterrent at the moment because it cost the clearer – not the landholder – $47,000 in a fine and associated court costs, not including what he would have paid on his own lawyers. I think he is probably looking at $70,000 total cost, which is reasonable. The problem is that rehabilitation of the wetland will cost over $100,000, so we are currently looking at the possibility of maybe having a court order to rehabilitate as well.[199]

6.229 Other examples include:

- in Victoria, a fertiliser producer was fined $48,000 for leakage of chemicals into Stony Creek;[200]
- Shell's Geelong refinery was fined $15,000 over three oil spills into Corio Bay;[201]
- WA Water Corporation officials issued twelve on the spot fines or formal warnings for people watering their gardens outside the rostered times;[202]
- a new enforcement campaign is underway by the SA EPA against polluters of the Port River in Adelaide;[203]
- there is an overall increase in the number of fines being issued in Victoria: 8523 Victorians were fined for littering in 2001-2002 compared to 7507 in 2000-2001 and 6400 in 1999-2000;[204] and
- a Melbourne manufacturer was fined $52,000 for allowing hydraulic oil to leak into Merri Creek. Interestingly, the company was also ordered to publicise its offence in newspapers and list it in its annual report.[205]

6.230 Mr Gersbach of the Housing Industry of Australia also made this comment on the enforcement of sediment controls on NSW building sites:

> We have the *Protection of Environment Operations Act 1997*, which empowers councils to impose on-the-spot fines for the lack of sedimentation control on building sites. So, whilst the builders may not be very good at practising control – some are, some are not; and the ones that are not would

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199 Dr Leybourne, *Proof Committee Hansard, Perth, 29 April 2002*, p 389.

200 Herald Sun, *Polluter fined $48,000*, 17 Aug 2002, p 13.

201 Age, *Refinery fined for 'totally unacceptable' spills*, 3 Aug 2002, p 14.

202 *Blitz nets water wasters*, West Australian, 20 Jun 2002, p 4.

203 Advertiser, *Toxic avengers target Port River*, 22 May 2002, p 9.

204 Sunday Herald Sun, *Gutters flow to rivers of shame*, 21 July 2002, p 10.

205 Herald Sun, *Polluter tells all*, 4 Jun 2002, p 2.

> blame the subcontractors that come to sites on an infrequent basis – they certainly are exposed to some quite hefty fines for not having a system in place.[206]

6.231 The fact that the majority of submissions from councils and state governments are silent on the subject of enforcement programs and that these do not seem to feature in the urban water management strategies of many agencies is significant.

6.232 An effective enforcement policy is a necessary underpinning of any regulatory strategy. While prosecution should be used carefully and appropriately, a failure to enforce the law undermines both the legitimacy of the laws, and the credibility of the agencies responsible for enforcing them. Businesses and individuals should know that a failure to obey the law is likely to be costly for them, while members of the public who report incidents should be confident that regulatory agencies will promptly investigate these reports and where appropriate, prosecute.

6.233 In the experience of the City of Port Phillip, prosecutions can be most successful if teamed with a media strategy, which ensures not only fines, but bad publicity for errant companies and operators.[207]

Public interest litigation

6.234 Taking legal enforcement action may also be done by members of the public. This can take the form of a reporting system, as the Nature Conservation Council of NSW suggests:

> The public should be employed as a government 'watchdog' through developing a sense of ownership for the environment in the community to encourage them to report incidents. This initiative must be supported by a reliable response system within government that addresses community concerns. An independent environmental ombudsman could be instated to mediate on behalf the public on specific matters and ensure that government departments address issues in a consistent manner.[208]

6.235 The Wildlife Preservation Society of Queensland gave this example of citizen initiated litigation in which it was involved:

> We will use things like the Nature Conservation Act and local government policies. A recent case was a wetland area down on Hilliards Creek. They wanted to put something like 140 houses on that land. It is right next to a Ramsar site and it forms a boundary with a marine park. In that instance council rejected it and we supported council by going to court with them and supplying a barrister. We supplied our own expert witnesses…[209]

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206 Mr Gersbach, *Proof Committee Hansard*, Sydney, 18 April 2002, p 258.

207 Cr Johnstone, *Proof Committee Hansard*, Melbourne, 23 April 2002, p 361.

208 Nature Conservation Council of NSW, *Submission 29*, p 15.

209 Mr Baltais, *Proof Committee Hansard*, Brisbane, 4 April 2002, p 111.

6.236 This type of action is often limited by many current laws, which provide limited, if any, rights for private actions. Cost is also a major disincentive:

> The problem with those sorts of courts is that they are still very expensive. It will cost us around $6,000 and it might cost the developer $70,000. We are lucky in that we have got barristers and solicitors and experts out there willing to do work for us for nothing or at cost. That is luck. Otherwise we would have been up for $70,000.[210]

6.237 Mr Baltais comments that in general:

> the courts are very much behind the times. … So there is a lag time in the court to catch up with community expectations. We reinforce that by helping councils in court by backing them up and supplying our own legal team. That then shows the judge that the community have a genuine concern and are willing to put in that mileage.[211]

6.238 The Committee notes that private court actions are more a feature of the environment protection in the United States, where the Clean Water Act empowers third parties to bring an action in US courts to seek remedy for statutory and regulatory violations where the permitting authority fails to act.[212]

6.239 Since most of the relevant laws are those of the States or Territories, the Commonwealth has a limited role in enforcement. However, one area of direct Commonwealth interest is the funding of the Environmental Defenders Office Network around Australia under the Attorney-General's Department Community Environmental Legal Program. EDOs may not use these funds to assist clients in environmental litigation-related activities.[213]

6.240 The Committee considers that this unnecessarily limits the role of the EDOs, and prevents the fulfilment of a useful and central function.

Making informed choices – ratings schemes

6.241 A ratings scheme that compels producers to provide information on the performance of their product is an important element of public education schemes. It is also a necessary foundation for regulations that phase out appliances that do not meet prescribed minimum standards.

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210 Mr Baltais, *Proof Committee Hansard*, Brisbane, 4 April 2002, p 111.

211 Mr Baltais, *Proof Committee Hansard*, Brisbane, 4 April 2002, p 112.

212 Mr Diprose, *Proof Committee Hansard*, Melbourne, 23 April 2002, p 374. *See* the website of the US Riverwatch organisation for more information on the Clean Water Act at: www.riverwatch.org

213 *See* the Environmental Defender's Office network website, funding arrangements, at: www.edo.org.au

6.242 The concept of performance ratings is well established in Australia, with an energy efficiency star rating system for all appliances, and more recently, a fuel efficiency rating must be displayed on all new motor vehicles.[214] The ACT government requires an energy efficiency rating prior to a property being offered for sale, while all new residential properties are required to meet minimum energy efficiency standards.[215]

6.243 There is also a national water efficiency rating scheme for domestic appliances in operation, but it is not mandatory. The National Water Conservation Labelling Scheme aims to encourage greater uptake of water efficient products, and provides consumers with reliable information on the relative water efficiency of various appliances through rating labels displayed on appliances at the point of sale. It classifies a product's water saving properties from moderate to excellent, using a droplet symbol carrying one to five As and upgrades the Triple A scheme to more clearly differentiate between water efficient products whilst at the same time encouraging further improvements in performance and water efficiency.

6.244 The five A ratings are:

1A	2A	3A	4A	5A
A moderate level of water efficiency	A good level of water efficiency	A high level of water efficiency	A very high level of water efficiency	An excellent level of water efficiency

6.245 Eligible products must be tested by an independent approved laboratory for both water efficiency and conformance to appropriate Australian Standards for performance. The scheme currently covers washing machines, dishwashers, shower roses, toilet suites, taps and commercial urinals with other appliances to be added in the future.

6.246 Mr Wiskar of the Queensland EPA told the Committee:

> A lot of work has been done at a national level, trying to get major manufacturers to alter the amount of water that those types of machines use. There has been a level of success, probably more driven by the energy rating people, strangely enough, because the energy rating scheme is mandatory, whereas the water conservation scheme is non-mandatory and voluntary – by driving energy efficiency, it actually drives water efficiency as well, because the two are linked.

214 On 1 January 2001, Australian Design Rule (ADR) 81/00 Fuel Consumption Labelling for Light Vehicles commenced, requiring that all new vehicles up to 2.7 tonnes gross vehicle mass (GVM) carry a fuel consumption label on the windscreen at the point of sale. Australian Greenhouse Office, Energy & Transport, at: www.greenhouse.gov.au

215 For details of the scheme, see the ACT Government, Planning and Land Management site, at: www.palm.act.gov.au

> … You have had a strong federal government body that has driven the energy rating scheme and a limited involvement from the federal government to drive federally the water efficiency rating scheme, because it is mostly seen as a state and local government responsibility.[216]

6.247 Various submissions have suggested that the Commonwealth government should act to mandate these standards in the same way as energy efficiency.[217]

6.248 A similar ratings system could also be used for the water efficiency of buildings and developments, although it would generally be desirable to place water use as one measure in an overall environmental efficiency rating, rather than create a confusing multitude of different ratings systems.

6.249 The ratings scheme could also usefully be extended to water sensitive urban design equipment such as prefabricated Gross Pollutant Traps (GPTs). As Dr Jago of CDS Technologies, which produces GPTs points out, GPT systems are not currently rated and that they vary considerably in performance.[218] A comprehensive rating system of this type would assist community members, designers and building industry professionals to make more informed choices. The rating system also provides an important benchmark to enable governments – whether Commonwealth, state or local – or businesses, to set minimum performance standards for equipment or buildings.

Mandated water efficiency in Commonwealth buildings

6.250 The Commonwealth could boost the uptake of best practice by mandating high standards of water efficiency in all new Commonwealth government buildings, whether built or leased. Existing Commonwealth buildings could also be modified to comply with these higher standards within a stipulated period.

6.251 The Commonwealth has an enormous portfolio of properties and facilities across Australia. The non-Defence property portfolio for instance comprises over 180 properties valued at around $720 million.[219] Defence operates some 370 properties and 25,000 facilities, spread across approximately 3 million hectares of land and valued at around $15 billion.[220]

6.252 A portfolio of this size gives the Commonwealth enormous leverage over the property market. Requiring these properties to attain high levels of water efficiency immediately creates demand for these services, equipment and expertise all over

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216 Mr Wiskar, *Proof Committee Hansard*, Brisbane, 4 April 2002, p 144.

217 *See* for example: Mr Charter, *Proof Committee Hansard*, Adelaide, 30 April 2002, p 488; Mr Wiskar, *Proof Committee Hansard*, Brisbane, 4 April 2002, p 145; *and* Government of South Australia, *Submission 51*, p 24.

218 CDS Technologies, *Submission 63*, p 1.

219 Department of Finance and Administration, Property Group, at: www.dofa.gov.au/property

220 Department of Defence, Corporate Services and Infrastructure Group Infrastructure Division site, at: www.defence.gov.au/demg

Australia. As such, it would be an effective step in kick-starting demand, entrenching standards, developing industry expertise, and demonstrating the workability of such designs.

6.253 Such leadership is necessary in encouraging water efficiency in other parts of the Australian community.

Water efficiency in the Australian Parliament House

6.254 In this context, it is appropriate to examine the record of the Australian Parliament House.

6.255 Total consumption of water in the building is 95,041 kilolitres (41 per cent), with a further 136,647 kilolitres (or 59 per cent) used to water the gardens. A number of initiatives have been implemented to improve these consumption figures.

6.256 In the 23 hectares of gardens, there is monitoring of moisture and nutrient levels, so that water and fertilisers are only applied when necessary. This minimises both the amount of water used, and the nitrogen run-off into the stormwater system.

6.257 Parliament House has an automated paint separation facility:

> the new facility provides for paint and water in mixture to be received by the tank wherein it is chemically treated. The paint and sludge sinks to the bottom of the tank. A probe in the tank senses the level of the clean water in the tank and activates the automated valves which bleed off clean water to the sewer system.[221]

6.258 Two new projects also plan for an assessment of greywater for on-site irrigation, and installation of coalescing plate separators in two on-site washdown bays to prevent grease and oil from entering the sewerage system. In response to the current drought conditions, there have also been significant reductions in garden watering, especially in the outer gardens.[222]

6.259 However, there is room for improvement. None of the many toilets or showers in the building use twin flush cisterns, or low-flow shower heads. All of the showers produce very hot water, with water wasted in temperature adjustment.

6.260 The Joint House Department (JHD) has a comprehensive Environmental Management Plan (EMP), based on the requirements of the ASO 14001, tied to an Environmental Action Plan, and monitoring system (the Environmental Condition Index).

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221 JHD Environmental Presentation to National Conference of Parliamentary Environmental Committees, p 4.

222 Staying green: House in survival mode, Canberra Times, 28 Nov 02, p 3.

Accreditation of people

6.261 A fact that has become apparent in this inquiry is that successful implementation of water efficient practices in Australian urban centres will depend not only on planners and administrators, but the builders, plumbers, engineers, landscapers and other professions that actually put these ideas into practice. Many of the planning instruments, laws and policies are likely to be ineffectual if those on the ground do not understand their purpose.

6.262 Obviously the keys to this are the education and professional training programs that are the subject of Chapter 3. However, a corollary to this process is the creation of accreditation programs for skills in water efficiency. The Conservation Council of South Australia calls for a national scheme,[223] while the Committee notes that South Australia is already developing a system for accrediting plumbers under the Watercare program.[224]

6.263 Another example of this is the GreenPlumbers program which is an initiative of the Master Plumbers and Mechanical Services Association of Australia (MPMSAA) in association with Melbourne Water and RMIT. It has developed training programs to enhance plumbers' skills and knowledge about the environmental considerations of their work. The training helps plumbers to advise customers about energy efficiency or water conservation, and the most appropriate and cost effective appliances to suit individual needs. Since its establishment in 2001, 500 plumbers have been accredited as GreenPlumbers.[225]

6.264 The Committee endorses these programs and considers that they should provide the model for similar accreditation programs targeting all professions with roles in water management.

The Commonwealth as underwriter

6.265 As discussed, the Commonwealth already plays an important role in advancing best practice urban water management through various funding programs, including demonstrator projects. One opportunity for extending this role is by acting as an underwriter for best practice projects.

6.266 The Lynbrook Estate project in Victoria (discussed in detail in Chapter 4) offers a good example of how effective this can be. This best practice development only proceeded because Melbourne Water was prepared to underwrite the risks, by undertaking to bear the cost of retrofitting a conventional drainage system if the water sensitive urban design features were shown not to work. This action created an

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223 Conservation Council of South Australia, *Submission 35*, p 4.

224 Mr Allen, *Proof Committee Hansard*, Adelaide, 30 April 2002, p 468.

225 Green Plumbers, Media Release 4 October 2002. *See also* website, at: www.greenplumbers.com.au

environment of certainty for the local council.[226] Without Melbourne Water's undertaking, the risks of adopting the new technology could have been too great for the Council, which would not have approved the development:

> My view is that some strategic funding really ought to be directed at providing that certainty to local government. They do not have the capacity, in terms of skill to assess these things, but they ultimately inherit those assets. It is to provide that certainty to allow some of this newer technology to be adopted.[227]

6.267 The Committee sees merit in the Commonwealth developing a program along these lines. It would cost relatively little, providing the Commonwealth guarantee operated in conjunction with an adequate assessment of the projects.

Funding options – rebates, grants and subsidies

6.268 Three funding tools that have been successfully applied to encourage adoption of water efficiency are rebates, grants and subsidies.

6.269 Rebate programs involve the repayment by the government to the purchaser of a proportion of the purchase price of specified items. Rebates can apply to rainwater tanks, low flow shower roses, dual flush toilets, or water efficient plants.[228] According to Mr Gersbach of the Housing Industry Association, these can be very effective:

> If you knew that you could do that and end up getting $1,500 back in your hand, it would reduce the upfront costs and reduce significantly the period of payback. A GreenSmart builder would be aware of those incentives. For the hot water systems, for instance, there is the SEDA rebate and the renewable energy certificates rebate—and they mean quite a substantial reduction in the cost of a hot water system, adding up to about $800 or $900. It is a significant plus. It is the upfront cost of these sorts of provisions which would turn a lot of consumers off, other than those who are educated and have decided that that is the way that they wish to go.[229]

6.270 A variation of this approach is a revenue neutral fee and rebate system that applies on the sale price of appliances: a fee is paid on the cost of less efficient models

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226 Prof Wong, *Proof Committee Hansard*, Melbourne, 23 April 2002, p 271.

227 Prof Wong, *Proof Committee Hansard*, Melbourne, 23 April 2002, pp 271-272. *See also* Mr Bott, *Proof Committee Hansard*, Canberra 23 May, 2002, p 586.

228 Currently, for example, both ActewAGL and Brisbane City Council offer a rebate for installation of a rainwater tank. Matthew Franklin and Lachlan Heywood, *Top-up incentive for rainwater tanks*, Courier Mail, Thursday, 6 June 2002, p 15.

229 Mr Gersbach, *Proof Committee Hansard*, Sydney, 18 April 2002, p 262.

and a rebate is offered on the more efficient ones, with the fees collected paying for the rebates.[230]

6.271 Subsidies can be used in a similar way to reduce the cost of items that are deemed more water efficient relative to inefficient items, thereby making them relatively more affordable. This can be most effective in situations where water efficient appliances are more expensive and a subsidy makes them price competitive, and could be targeted at appliances such as more efficient garden watering systems, washing machines or dishwashers.

6.272 Grants are conditional payments to be used for a particular purpose. One suggestion made to the Committee was that the existing First Home Buyers grant be tailored to include environmental criteria, which could include requiring either some proportion of the money to be spent on water efficient design elements, or only using the money to purchase a house of stipulated minimum water efficiency standards. Mr Gersbach of the Housing Industry Association argued against this:

> It is a big call to say that $6,000 of your $14,000—which is soon to be reduced to $10,000—for new homes has to go to water sensitive principles. That is an economic call. The reason for the First Home Owners Grant was the government's recognition of the importance of the industry to the overall Australian economy. It was seen to be a bit of an impetus to continue that injection that the home industry brings to the economy. If part of that was going to be diverted to another environmental cause, we would certainly say: 'Great, but let's up the grant so that the impact overall is not lost.'
>
> … It is an idea, but I would tend to think that it would undermine the very reason for the grant in the first place. It was just to prime the economy, and it has been doing that quite successfully.[231]

6.273 However, the introduction of these sort of incentive schemes would be administratively complex and, as the Stormwater Industry Association argues, if the price of water reflected its true value, there would be no need to offer rebates as economics would be the driver:

> Let us say there was a price on water—and this is a dollar sign on water per litre—and it was shown to be world parity, even half of world parity pricing, because of the volume of water. I know in Sydney, we are running short of water as it stands. If that price reflected the true value of water, people would make their own economic decision to put in a tank.[232]

6.274 Similarly, according to Mr Davis:

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230 Water Services Association of Australia, Wise Water Management, A demand management manual for water utilities, Research report no. 86, November 1998, p 98.

231 *Proof Committee Hansard,* Sydney, 18 April 2002, pp 264-265.

232 Mr Boyden, *Proof Committee Hansard,* Sydney, 18 April 2002, p 158. *See also* Mr Wood, *Proof Committee Hansard,* Sydney, 18 April 2002, p 158.

> A lot of people espouse reuse, but if you are selling sparkling clean potable water for only a dollar, why would anyone pay 50c for some used water that they think is a little bit suspect? It is difficult. The reuse fraternity would love to see the price go up because then they could raise the cost of reused water and they could invest that money in getting, effectively, potable quality and then the whole system would drive itself to a logical outcome environmentally.[233]

6.275 There is also potential for rebate systems to be undermined by the providers of the rebated items simply increasing their prices to the amount of the rebate.[234]

6.276 A final cautionary issue of particular relevance to the Commonwealth relates to grants to fund the capital costs of installing infrastructure such as Gross Pollutant Traps that don't extend to cover the ongoing costs of maintenance.[235] As was discussed in Chapter 4, without proper maintenance many of these facilities not only become ineffective, but may even exacerbate the problem. The Commonwealth must therefore ensure that when making grants, adequate checks are made to ensure that provision has been made for long term maintenance funding.

6.277 As with all of the regulatory tools that are discussed in this report, financial incentive schemes have their strengths and weaknesses. The key to successfully using them is therefore to start with a detailed understanding of the problem and a clear objective. This provides the foundations for a cost benefit analysis to determine whether a subsidy, grant, or rebate will be effective. Mr Davis commented that:

> There is some very good work being done by the Institute for Sustainable Futures at the University of Technology in Sydney. They have ranked a whole lot of demand management initiatives against the return and the cost. Rainwater tanks were probably at the bottom of the list, but at the top of the list were things like shower roses. A shower rose has the double benefit that it saves energy as well, and you actually save more money on the energy than you do on the water. It is a double whammy. They have certainly ranked all these things.[236]

6.278 For these reasons, the Committee concludes that grants, subsidies and rebates are useful options in a wider framework to promote water efficiency, but is also aware that they need to be applied selectively and intelligently if they are to achieve cost effective benefits. Accordingly, while the Committee considers that they be actively considered by the Commonwealth government, it does not recommend any particular application.

6.279 More generally though, the Commonwealth distributes money to states, local governments, associations, and individuals across numerous programs. It is important

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233 Mr Davis, *Proof Committee Hansard,* Sydney, 18 April, 2002, p 227.

234 *Proof Committee Hansard,* Sydney, 18 April 2002, p 265.

235 Cr Johnstone, *Proof Committee Hansard,* Melbourne, 23 April 2002, p 360.

236 Mr Davis, *Proof Committee Hansard,* Sydney, 18 April, 2002, p 227.

that these grants are not used in ways that have adverse environmental effects. For example, there is little benefit making an NHT grant to build a best practice stormwater management demonstrator project, while a new highway nearby built with a Federal grant, ignores such principles.