

Water: Access, Affordability and Sustainability

Issues Paper

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Executive Summary

Gerard Brody*

The Victorian Government's recently released White Paper on water, *Securing Our Water Future Together* (the **White Paper**),¹ provides for forward-looking policy to encourage more efficient and sustainable water use into the future. Many of Victoria's rivers and water bodies are in a stressed and degraded condition, and risks posed by prolonged droughts, population growth and climate change will contribute to the ongoing unsustainable use of Victoria's limited water resources. In this context, the White Paper provides a timely and critical response by promoting water conservation, sustainable water allocation, irrigation and river health.

In his foreword to the White Paper, the Minister for Water John Thwaites notes that:

“water is essential to our everyday lives: we use it for drinking, washing and watering — the very basic human needs. Our communities thrive on it, our economy relies on it and our environment survives on it”.

This quote provides a strong foundation from which water can be analysed, recognising the inter-relatedness of environmental, social and economic aspects to water. More importantly, it begins from the recognition that access to water is an essential human right. In our view, however, the White Paper and associated policy reforms have not yet fully addressed the social impacts for consumers arising out of the new policy and regulatory framework with respect to water. This is particularly salient with respect to the increased commercialisation of the water industry and its subsequent impact on rural and regional consumers.

While water policies and reforms must be developed with environmental sustainability as an essential focus, we believe the issues of human rights and access and affordability are critical to the current debate. In this respect, this issues paper provides the necessary focus that has been lacking in much discussion on water resources planning and regulation.

Water – Access, Affordability and Sustainability analyses water as a fundamental human right. Viewing water as a human right contributes towards resolving the tensions between the competing interests of consumers and the environment. In this context, the issues paper then examines the manner in which the regulation of water, including pricing, restrictions and cost-incentives for water efficiency, are likely to impact upon low-income and vulnerable consumers. It also examines the environment's access to water, recognising that consumer needs are predicated on there being sustainable use of water resources and sufficient environmental health. Discussion of these issues is supported by particular recommendations which aim to stimulate targeted debate and input into government water policy and regulation.

Victoria urgently needs an innovative, integrated approach to water that not only combines environmental policy and social policy, but also ensures robust consumer protection across the water sector. Such an approach is fundamental in ensuring all Victorians have access to affordable water, as well as providing consistent incentives for conservation.

Water – Access, Affordability and Sustainability is comprised of four chapters. Chapters one and two are authored by Anna Stewart, Deputy Director, and Eliza Collier, Senior Solicitor, of the Consumer Law Centre Victoria (CLCV) and chapters three and four are contributed by Dr Paul Sinclair, Director of the Healthy Rivers Campaign at Environment Victoria. The authors also acknowledge the input of Professor Jennifer McKay, Convenor of the Centre for Comparative Water Policies and Laws at the University of

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¹ Department of Sustainability and Environment, *Securing Our Water Future Together*, June 2004.

South Australia. The following provides a brief overview of each chapter together with their associated policy recommendations.

1. Water as a human right

Chapter one outlines the right to water as it exists in various international treaties and declarations, as well as any legal requirements that may exist in Australia with respect to a human right to water. After firstly defining the human right to water as a right to sufficient clean water at an affordable price in order to meet basic needs, the chapter argues that recognition of this right is an important step to resolving the competing interests of consumers and the environment with respect to water.

Recommendation:

- The Victorian Government, in any move towards introducing express protections of human rights, must ensure that the right to water be explicitly acknowledged.

2. Access and affordability of water

Chapter two analyses the reforms to water policy and regulation that are currently taking place in Victoria. It outlines the difficulties faced by low-income and vulnerable consumers in paying for the water necessary to meet their basic needs and suggests that some of the reforms may exacerbate these difficulties. Proposals to increase water and sewerage prices so that water businesses can recover the full costs of providing water and sewerage services may especially impact upon low-income and vulnerable consumers. As such, the chapter argues for the social impact of water regulation to be more fully considered and recommends a range of measures that may be undertaken in order to improve consumers' access to affordable water and sewerage services.

Recommendations:

- That rising block tariffs be introduced across the water sector in preference to increases to a flat volumetric charge or a flat price increase during summer months. Such tariffs should, ultimately, be implemented in regional areas, as well as the metropolitan areas. However, care needs to be taken to ensure that the first block is set at a level that ensures that an essential water supply is affordable and should only be implemented in the context of other measures to address affordability problems for low-income and vulnerable consumers.
- That further consideration be given to the potential effectiveness of a special tariff for consumers who are in particularly vulnerable circumstances such as very large families.
- That any potential for the implementation of late payment fees for water be eliminated from the Customer Service Code.
- That changes to the *Water Act 1989* (Vic) be implemented to remove the ability of regional businesses to charge interest and to impose a statutory charge over a consumer's property.
- That all regional-urban water businesses self impose a moratorium on charging of interest against all concession holders.
- That hardship policies should include elements of debt forgiveness, particularly where extreme hardship is experienced.
- That hardship policies be implemented by water businesses in the context of a range of other customer protections and adequate complaints handling policies and procedures, including fair procedures for debt collection.

- That concession amounts and frameworks, including the concession cap level, are regularly reviewed to keep pace with increased water prices.
- That the Water Conservation Assistance Program, Smart Homes Program or similar assistance be expanded so as to increase water efficiency in low-income households across all water businesses.
- That new water saving measures for large families should be implemented in regional urban areas as well as metropolitan areas where rising block tariffs are introduced.
- That there be increased access to rebate schemes for consumers who are not connected to the reticulated water supply.
- That the *Residential Tenancies Act 1997* (Vic) be amended to introduce water efficiency audits and to provide incentives to landlords to improve the water efficiency of rental properties.
- That the Government engage a review of public housing to ensure that all public homes are fitted with water efficient appliances.
- That the Commission should engage in further research to obtain better indications of affordability problems. This study should focus specifically on low-income and vulnerable consumers and consider the impact of price increases on essential water use in poorer or more vulnerable households.

3. Protecting the environment's access to water

Chapter three provides a detailed analysis of the impact of water on the natural environment and suggests that increased competition between consumptive uses of water has contributed to growing water scarcity which has a significant impact on environmental health. The chapter then considers the current water allocation framework in Victoria, focusing on the bulk water entitlement conversion process and the development of water markets, to argue that the current legislative and institutional framework has been unable to protect the environment's access to water.

Recommendations:

- That robust legislative and institutional reform is required to protect the environment's access to water.
- That water markets should operate to increase productivity and efficiency so as to develop water savings which can be returned to the environment.

4. Creating an integrated statutory planning framework for water

The final chapter argues that Victoria requires a new integrated statutory planning framework for water that guarantees access to water for the environment. Water planning processes, including the proposed State-wide Water Inventory and regional sustainable water strategies, need adequate funding and resources and need to be integrated with other land-use planning frameworks. Implementation of the Environmental Water Reserve, foreshadowed in the White Paper as the primary measure to achieve environmental protection in river and groundwater systems, requires strong legislative and institutional support so that its effectiveness in protecting the environment is maximised. Finally, the chapter examines the pricing of irrigation of water, identifying the environmental costs and subsidies that inhibit conservation and productivity in the agricultural sector. The discussion and recommendations in chapter four are informed by the paper *Recommendations for legislative implementation of White Paper's proposed reforms*. This paper, prepared by Phillips Fox Lawyers on behalf of Environment Victoria, Environment Defenders Office, Australian Conservation Foundation and WWF, is included as an attachment to this chapter.

Recommendations

- That the *Water Act 1989* (Vic) should be amended to include improved and robust integration of State and regional water planning mechanisms, including legislative implementation of the State Water Inventory and Sustainable Water Strategies, complemented by adequate funding to ensure practical implementation.
- That an Environmental Water Reserve be implemented through robust legislative and practical protection, recognising the environment's prior right to water.
- That water used for irrigation should be priced to reflect the real environmental, social and economic costs of water extraction, distribution and management, including the environmental costs of agricultural production, economic costs of degraded resources, direct and hidden subsidies of water irrigation and the value of natural assets and ecosystems.

1. Water as a human right.

Anna Stewart*

“Access to safe water is a fundamental human need and, therefore, a basic human right.”

Kofi Annan, United Nations Secretary-General¹

1. Introduction

Water is essential to human life. We require it in most facets of everyday life, for drinking, washing, farming and manufacturing — without water we cannot live for more than a few days. Yet, despite the fact that water is fundamental to our very existence, a right to water has not been clearly defined in international law, nor has it been expressly recognised as a fundamental human right.² Instead, a right to water is viewed as an implicit part of existing fundamental human rights. This chapter outlines the right to water, as it exists in various international treaties and declarations, as well as any legal requirements that may exist in Australia with respect to a human right to water. It then goes on to suggest that the explicit protection of the human right to water be considered in ongoing public discussion concerning the adoption of a Charter of Human Rights and Responsibilities or a Citizen’s Charter in Victoria, flagged last year in the Victorian Attorney-General’s Justice Statement (the **Justice Statement**).³

By way of introduction to the following discussion, it is first important to define what is meant by the phrase “right to water”. In our view, a right to water is a right to access sufficient clean water at an affordable price in order to meet basic human needs. However, a right to water is not simply about human needs. It is also about the needs of the environment, particularly with respect to maintaining ecosystem health and ensuring adequate water for the environment. Recognising the rights and obligations of people in relation to water, within an overarching human rights framework, is one of a number of important steps towards resolving the tensions between the competing interests of consumers and the environment.

2. What is a human right?

Human rights are essentially about the relationship between the individual and the State and are primarily governed by international law.⁴ They include civil, political, social, cultural and economic rights and they are protected by internationally guaranteed standards that ensure fundamental freedoms and dignity of individuals and communities.⁵ Most breaches of human rights are caused by the State (ie government) acting against its citizens or those in its jurisdiction, and for this reason, international human rights laws

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¹ Quoted in World Health Organisation, *The Right to Water* (2003) at 6, available at http://www.who.int/water_sanitation_health/righttowater/en/.

² J.Scanlon, A.Cassar and N.Nemes, *Water as a Human Right?*, IUCN Environmental Policy and Law Paper No. 51, IUCN – The World Conservation Union, 2004 at 12.

³ Department of Justice (Victoria), *New Directions for the Victorian Justice System 2004-2014 – Attorney-General’s Justice Statement*, May 2004.

⁴ There are a number of academic theories with respect to what are human rights. See, for example, M Dixon and R McCorquodale, *Cases and Materials on International Law*, 2nd ed, 1991. Also see A Pettit and P Ranald, *Protecting Human Rights in Australia: A Community Education Kit*, Public Interest Advocacy Centre, July 2004, available at <http://www.piac.asn.au/>.

⁵ World Health Organisation, *The Right to Water*, February 2003 at 7.

generally operate beyond national legal systems and are an objective standard against which States can be judged.⁶

The obligations of the State with respect to water have been categorised by the World Health Organisation (**WHO**) in the following way:

- *Respect*: the obligation to respect requires that the State parties refrain from interfering directly or indirectly with the right to water.
- *Protect*: the obligation to protect requires that State parties prevent third parties, such as corporations, from interfering in any way with the enjoyment of the right to water.
- *Fulfil*: the obligation to fulfil requires that State parties adopt necessary measures to achieve the full realisation of the right to water.⁷

2003 was the International Year of Freshwater. It was one of the United Nations (**UN**) Millennium development goals “to halve, by the year 2015 ... the proportion of people who are unable to reach, or to afford, safe drinking water” and “to stop the unsustainable exploitation of water resources”.⁸ This goal was endorsed by the World Summit on Sustainable Development (**WSSD**) held in Johannesburg in 2002, at which the vital role of water in agriculture, health, energy, biodiversity and ecosystems, as well as in combating poverty, was widely supported. Yet, despite the efforts and aspirations of the international community, today 1.2 billion people lack an adequate supply of safe water, and two fifths of the world’s population (2.4 billion people) lack access to proper sanitation.⁹

3. International instruments and the recognition of the right to water

The right to water, while not specifically mentioned in the following international instruments, is clearly implicitly recognised.

Article 55 of the Charter of the UN promotes:

- (a) higher standards of living, full employment and conditions of economic and social progress and development;
- (b) solutions of international economic, social health and related problems; and international cultural and educational cooperation; and
- (c) universal respect for, and observance of, human rights and fundamental freedoms for all without distinction as to race, sex, language or religion.

Without water, these aims could not be realised.

The first international statement of human rights, adopted by UN member nations in 1948, was the *Universal Declaration of Human Rights* (the **Declaration**). The Declaration, while not legally binding, recognises the inherent dignity and the equal and inalienable rights of all human beings, with certain basic needs being essential to the recognition of those rights. Water is one of those basic human needs.

Two UN Covenants transform the principles of the Declaration into international law – the *International Covenant on Civil and Political Rights* (**ICCPR**)¹⁰ and the *International Covenant on Economic, Social and Cultural Rights* (**ICESCR**)¹¹.

⁶ Dixon and McCorquodale, above n 4 at 192.

⁷ WHO, above n 5.

⁸ UNDP, *Millennium Development Goals*, available at www.undp.org/mdg/.

⁹ Australian Consumers’ Association, *Water: a consumer right?*, CHOICE, May 2004 at 30.

¹⁰ *International Covenant on Civil and Political Rights*, GA Res 2200, 21st sess, 1496th plen mtg, UN Doc A/6316 (1966). The ICCPR was adopted on 16 December 1966 and entered into force 23 March 1976 and in Australia on 13 November 1980.

¹¹ *International Covenant on Economic, Social and Cultural Rights*, GA Res 2200, 21st sess, 1496th plen mtg, UN Doc A/6316 (1966). The ICESCR was adopted on 16 December 1966 and entered into force 3 January 1976 and in Australia on 10 March 1976.

While water is not explicitly mentioned in the Declaration, the ICCPR or the ICESCR, there is nevertheless an implied right to water:

- for life and survival;
- for food production;
- (and sanitation) for health;
- (and sanitation) as part of a right to housing;
- for adequate standard of living;
- for securing livelihoods;
- as part of the right to development;
- as part of the right to natural resources;
- as an element of the right to property;
- as an element of the right to a safe and healthy environment; and
- for cultural practices.

In November 2002, the United Nations Committee on Economic, Social and Cultural Rights (**CESCR**), the UN body responsible for monitoring implementation of the rights contained in the ICESCR, released *General Comment No. 15 on the Right to Water (the General Comment)*¹². In essence, the General Comment serves as an interpretive instrument for Articles 11 and 12 of the ICESCR. The CESCR expressly stated that all member States have an obligation under international human rights law to respect, protect and fulfil the right to water. According to the CESCR, “the human right to water is indispensable for leading a life in human dignity. It is the prerequisite for the realization of other human rights”. Member States “have a constant and continuing duty” to ensure that everyone has access to safe and secure drinking water and sanitation facilities.¹³ In reality, this transforms into member States taking steps to accord sufficient recognition of this right within the national political and legal systems in their jurisdiction, preferably by:

- legislative implementation;
- adopting a national water strategy and plan of action to realise this right;
- ensuring that water is affordable for everyone; and
- facilitating improved access to water, particularly in rural and deprived urban areas.

While the General Comment is not binding, General Comments carry considerable weight, especially when supported by inclusion in the CESCR Annual Report, which is endorsed by the UN General Assembly.

By way of comparison to the above covenants, in which the right to water is implicit, access to water enjoys explicit protection under the *Convention on the Elimination of All Forms of Discrimination Against Women* and the *Convention on the Rights of the Child (CRC)*.¹⁴ Article 24.2(c) of the CRC sets out the obligations of the State with respect to clean drinking water and environmental pollution, and states that:

“To combat disease and malnutrition, including within the framework of primary health care, through, *inter alia*, the application of readily available technology and through the provision of adequate nutritious foods and clean drinking-water, taking into consideration the dangers and risks of environmental pollution.”

As the above discussion illustrates, the human right to water has not been clearly defined in international law and has not been expressed as a fundamental human right. However, there appears to be growing consensus amongst commentators and environmental and human rights organisations that there is a pressing need to define a human right to water.¹⁵ Both the WSSD and the Millennium Declaration suggest that the common

¹² UN Economic and Social Council, Committee on Economic and Cultural rights, General Comment No. 15, *The right to water (Articles 11 and 12 of the International Convention on Economic, Social and Cultural Rights)* UN Doc E/C.12/2002/11, 20 January 2003.

¹³ As above at 8.

¹⁴ *Convention on the Rights of the Child*, GA Res. 44/25, UN GAOR, 44th sess, 61st plen mtg., UN Doc A/Res/44/25 (1989). The CRC entered into force generally on 2 September 1990, with entry into force in Australia on 16 January 1991.

¹⁵ Dixon and McCorquodale, above n 4 at 12.

objectives which exist between the various international human rights instruments (some of which are discussed above) are increasingly being recognised by the international community.

4. Water and the Right to Health

“... it is essential for water planning to secure basic human and environmental needs for water [and]...develop sustainable water strategies that address basic human needs, as well as the preservation of ecosystems.” [United Nations 1997]¹⁶

Another way in which to recognise the concept of water as a human right is to frame it within the human right to health.¹⁷ The right to health has been explicitly recognised in international law for over fifty years and features in a number of international treaties to which Australia is a party, including the ICESCR and the CRC. The Constitution of the World Health Organisation (**WHO**) defines health as “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity [being] one of the fundamental rights of every human being...”.¹⁸ As a member of the body determining WHO policy, the World Health Assembly (**WHA**), Australia is committed to support, in principle, policy issuing from the WHO. This commitment is reflected in, for example, the *Australian Drinking Water Guidelines*,¹⁹ which are modelled on the *WHO Guidelines for Drinking Water Quality*.²⁰

In 1995 the WHA renewed the Health for All (**HFA**) campaign, which was originally launched in 1977, as the policy and vision of the WHO for delivering health to the world’s population. Health indicators were developed as part of the HFA and member states agreed to supply requested information on an annual basis, including data on the percentage of the population with access to an adequate supply of potable water.²¹ The renewal of the HFA confirmed the importance of water supply as a key determinant of human health and emphasised the need for equity in all aspects of health policy, with notions of equity requiring that services are provided according to need.²² On this basis, access to an affordable supply of potable water can be viewed as a fundamental human right. It is vital that measures introduced by the Victorian government to reduce demand for water address concerns regarding economic accessibility. As discussed further in chapter 2, any measures introduced to address the conservation of water should not result in “...an unfair economic burden placed on the socially disadvantaged [which] has the potential to violate the obligation to respect and the obligation to fulfil the right to health.”²³

What then is the basic water requirement for human health? Scientists estimate that for fluid replacement an adult human requires around three litres of water per day under average temperature climate conditions.²⁴ A further minimum of 20 litres per day is seen as necessary for sanitation (waster disposal).²⁵ On top of this, an additional 25 litres of water per day is required for basic hygiene (washing, showering and bathing) and for food preparation.²⁶ Accordingly, a target of 20 to 40 litres of water per person per day has been set by the WHO.²⁷ This amount is also in line with the recommended standards of the UN International Drinking Water and Supply Decade and Agenda 21 of the Earth Summit.²⁸ As Gleick notes, adding minimum levels

¹⁶ P H Gleick, *The World’s Water 1998-1999: The Biennial Report on Freshwater Resources*, 1998 at 42.

¹⁷ See H Potts, *Submission to the Water Resources Strategy Committee regarding the Strategy Directions report ‘21st Century Melbourne: A Water Smart City’*, Castan Centre for Human Rights Law, Monash University, available at <http://www.law.monash.edu.au/castancentre/submissions/watersmart.html>.

¹⁸ *Constitution of the World Health Organisation* as adopted by the International Health Conference in New York on 19-22 June 1946; signed on 22 July 1946 by the representatives of 61 States and entered into force on 7 April 1948. See www.who.int.

¹⁹ Published by the National Health and Medical Council. See www.health.gov.au.

²⁰ Potts, above n 17 at 2.

²¹ As above.

²² As above.

²³ As above at 7.

²⁴ Gleick, above n 16 at 43.

²⁵ As above.

²⁶ As above at 44.

²⁷ As above.

²⁸ As above.

of water for cooking and bathing raises the overall “basic water requirement” to 50 litres per person per day in order to meet the four basic domestic needs of drinking, sanitation, bathing and cooking, independent of climate, technology and culture.²⁹

While many regions of the world lack the water required to meet the basic human needs identified above, Australia is fortunately not in such a position. However, as the Victorian Government’s White Paper on water (the **White Paper**)³⁰ emphasises, water is an increasingly scarce resource which consumers – be they industry, farmers or domestic households – must endeavour to conserve for the health of the environment and Victoria’s freshwater ecosystems. Yet, as discussed in chapter 2, increasing the cost of water may have a detrimental impact on low-income consumers, especially those unable to reduce their demand due to household size, inefficient appliances or illness. The challenge for the Victorian government will be to ensure that environmental and consumer demands are balanced appropriately. However, while there is little doubt that consumers must acknowledge that they have an obligation to conserve water, as discussed above, access to an affordable supply of water is necessary to satisfy the human right to health. What it means to say that an essential water supply should be affordable is discussed further in part 4 of chapter 2.

5. The human right to water – the South African experience

Although Australia is a signatory to a number of international conventions which protect human rights, conventions only become law in Australia when they are referenced in legislation. This is one reason why, as some commentators have noted, Australia’s implementation of human rights protections has been inconsistent.³¹ In addition, unlike the majority of industrialised nations, Australia does not have a Charter or Bill of Rights through which to afford full legal protection to human rights. The Australian Constitution provides limited protection for rights, such as freedom of religion and freedom of political expression, although they generally only apply to federal laws and have been narrowly interpreted by the High Court of Australia.

Despite many attempts to introduce a Charter or Bill of Rights into Australia at both a state and federal level, due to a lack of political will and public support, these attempts have been unsuccessful. However, the Australian Capital Territory recently passed the *Human Rights Act 2004 (ACT)* (the **Act**), an Act designed “to respect, protect and promote human rights”. Part 3 of the Act sets out the human rights protected under the Act, being primarily civil and political rights. Although the Act recognises the right to life, there is no mention of environmental rights or any other rights which explicitly, or even implicitly, recognise the right to water. Accordingly, no government in Australia, whether federal, state or local, has a legal obligation to ensure that everyone has a right to access sufficient safe water.

By way of comparison, human rights and environmental provisions regarding the right to water are found in national constitutions of more than sixty States, including Chile, Ecuador, Hungary, Nicaragua, Peru, Portugal, Turkey and, most notably, in the Constitution of the Republic of South Africa 1996. Under section 27.1 of the *Bill of Rights, Constitution of the Republic of South Africa 1996*:

Everyone has the right to have access to:

- a. health care services, including reproductive health care;
- b. sufficient food and water; and
- c. social security, including, if they are unable to support themselves and their dependants, appropriate social assistance.

Pursuant to subsection 2, the State must take reasonable legislative and other measures, within its available resources, to achieve the progressive realisation of each of these rights.

²⁹ As above.

³⁰ Department of Sustainability and Environment, *Securing Our Water Future Together*, June 2004.

³¹ See, for example, Pettit and Ranald, above n 4.

The South African Government considers that water is affordable providing that households spend less than five percent of their expendable income on water services.³² In addition, the South African Government has estimated that in urban areas each individual requires between 100 and 200 litres of water per day to maintain a high standard of living. The *National Water Act 1998* (RSA) provides each individual with 25 litres of water per day, primarily for cooking and drinking, at no charge to the individual. This amount is referred to as the first tier right, and is granted at the expense of the Government. The second and third tiers in the pricing regime are for discretionary use and the price is set according to the principle of “user pays”.

Also of note in South Africa is the *South African Development Community Protocol on Shared Watercourse Systems (1995)*³³ (the **SADC Protocol**). The SADC Protocol was seen as the way forward to promote water sharing and sustainable development and equitable utilisation of limited water resources in the Southern African region. The SADC Protocol is binding on signatory States and can only be abandoned if three quarters of the signatory States so agree.

The following four key issues are highlighted in the SADC Protocol:

- the human right to water for vital supplies;
- equitable and reasonable utilisation;³⁴
- the need for sustainable development to minimise environmental harm; and
- public participation in water decisions.

The SADC Protocol obliges member states to require any person intending to use the water for purposes other than domestic use³⁵ or any person intending to discharge waste into such waters to obtain a permit. The member states can issue permits but only after determining that any such discharge would not have a detrimental effect on the regime of the watercourse system.³⁶ All riparians must notify others of planned actions and must pursue close co-operation and study on all projects likely to have an effect on the watercourse.

The SADC Protocol also recommends the establishment of a number of institutions such as monitoring units and river basin commissions. These institutions aim to develop a monitoring policy, promote equitable utilisation, formulate strategies for development and monitor integrated water resources development plans. The SADC Protocol also provides for a number of functions for river basin management institutions with regard to national water policies, research information and data handling, water control and utilisation and environmental protection. Recommendations outlined in chapter 4, *Creating an integrated statutory planning framework for water*, argue for the establishment of a similar framework to that provided for by the SADC protocol.

³² R Eberhand, *Supply Pricing of Urban Water in South Africa*, Vol. 1, 1999.

³³ Signatory States are Angola, Botswana, Congo, Lesotho, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe. Note that on August 7 2000 all 14 members of the SADC, except Congo, signed the *Revised Protocol on Shared Watercourses in the Southern African Development Community*.

³⁴ The factors to be considered when determining equitable and reasonable utilization are:

- Geographical, hydrographical, hydrological, climatic and other factors of a natural character;
- The social and economic needs of the member states concerned;
- The effects of the use of the shared watercourse system in one watercourse state on another watercourse state;
- Existing and potential uses of the shared watercourse system; and
- Guidelines and agreed standards to be adopted.

See the *UN Convention on the Non-navigational Use of International Watercourses*, GA Res 51/206, UN GAOR, 51st sess, 88th plen mtg, UN Doc A/Res/51/206 (17 December 1996).

³⁵ Defined as use of water for drinking, washing, cooking, bathing, sanitation and stock watering purposes.

³⁶ Article 2(8) Regulation of the flow of the waters of a shared watercourse means the use of hydraulic works of any other continuing measures to alter vary or otherwise control the flow of waters of a shared watercourse.

6. Why should the Victorian Government recognise the human right to water?

As is noted in the White Paper, the management of water is a State responsibility. Given the reforms currently taking in place in Victoria with respect to water, it is the right time for the Victorian Government to explicitly recognise the human right to water, either through forthcoming legislation currently being drafted to support the White Paper proposals, or preferably through a separate initiative, such as one of the models discussed in the Justice Statement. While it remains unlikely that a national Bill of Rights will be introduced at a federal level in the near future, there is no reason why the Victorian Government cannot effect more explicit protection of human rights for Victorians.³⁷

As Victoria's population increases, water supplies will become increasingly stressed, while meeting the demand for adequate supply will remain essential. Further, it is estimated that on a global scale, climate change will account for around 20 percent of the increase in water scarcity.³⁸

While many regions of the world lack the water required to meet basic human needs, Australia is fortunately not in such a position. However, given that water is an increasingly scarce resource, consumers – be they industry, farmers or domestic households – must conserve it for the health of the environment. Increasing the cost of water, an inevitable consequence of demand management initiatives, may have a detrimental impact on low-income consumers, especially those unable to reduce their demand due to household size, inefficient appliances or illness. The challenge for the Victorian Government in implementing its comprehensive water policy will be to ensure that environmental and consumer demands are balanced appropriately. From a consumer perspective, we are also strongly concerned to ensure that no Victorian household is disconnected or restricted from water on the basis of incapacity to pay alone and placing access to water services within a human rights framework may assist in the achievement of this goal.

With discussion currently being led by the Department of Justice with respect to how human rights and obligations can best be promoted and protected in Victoria, an exciting opportunity now exists to argue for the explicit protection of the human right to water. The right to water may be implemented through a Charter of Human Rights and Responsibilities or a Citizen's Charter, which are both models discussed in the Justice Statement. While such a charter could be constitutionally entrenched (meaning it could only be changed by referendum), statutory (meaning it could be changed by an Act of Parliament, just like any other piece of legislation) or a non-legislative declaration of rights and responsibilities (meaning it would be an aspirational statement rather than binding)³⁹, explicitly acknowledging the right to water would make a clear statement about the importance of water to human health and well-being.

Direct comparisons between Australia and South Africa, with respect to access to a basic supply of clean drinking water, are obviously not appropriate given that, with the exception perhaps of remote Indigenous communities, most of the Australian population has access to safe and adequate water supplies for basic human needs. However, the South African model could nevertheless be the basis for a Victorian model, with the primary focus on affordability for low-income households. Perhaps the first 20 litres per day could be free for low-income households, or alternatively, perhaps the focus of the right could be framed in terms of a prohibition on restriction in circumstances where the household lacks the financial capacity to pay. Of course, any move towards enshrining a human right to water for Victorians would need to be carefully implemented to ensure that human needs do not deprive the environment of its needs, for the high cost of a dying river system will be a cost met by all consumers, both now and into the future.

³⁷ Department of Justice, above n 2 at 54.

³⁸ As above at 18.

³⁹ As above at 54-55.

Recommendation:

- **The Victorian Government, in any move towards introducing express protections of human rights, must ensure that the right to water be explicitly acknowledged.**

2. Access and Affordability of Water

Eliza Collier*

1. Introduction

Chapter 1 argued that access to water is an essential service that is fundamental to the welfare of individuals and should be recognised as a human right. This chapter discusses the ways in which reforms to water policy and regulation that are currently taking place in Victoria may create affordability problems for some low-income and vulnerable water consumers in metropolitan and regional-urban areas, affecting their ability to enjoy the human right to water.

For a variety of reasons, which will be discussed below, low-income and vulnerable consumers may experience difficulties paying for the water necessary to meet their basic needs. Such difficulties that may be exacerbated if prices for water increase as a result of the current reforms. For this reason, we argue that it is vital that socially responsible measures are undertaken by water companies and through Government funded concessions to alleviate any disproportionate impact that reforms may have on low-income and vulnerable consumers.

This chapter discusses various measures that have been put forward to address affordability problems, including the structure of tariffs for retail water and sewerage services and various other measures such as financial hardship policies, consumer protection standards and improved concessions. Also considered are other demand-side measures that are designed to improve consumers' understanding of water conservation and access to water efficient appliances, including measures to address water efficiency in rental properties.

Consumers living in rural areas, who are not connected to a reticulated water supply, may face problems with access or affordability in relation to their water supply and they may also be affected by the reform process (but in a different way to those living in metropolitan and regional-urban areas). Although we have not specifically addressed issues affecting rural water users in detail in this chapter, we have mentioned some relevant comparisons and particular issues where possible.

In our view, all major policy decisions made in relation to water must take into account both social and environmental issues and the links between them, alongside economic efficiency, as essential factors in achieving the goal of long term sustainable water use in Victoria.

2. Regulation of water in Victoria: an overview

Water and sewage services in metropolitan areas around Melbourne are supplied by three retailers.¹ The three retailers are corporatised entities owned by the Victorian Government and are regulated by the *Water Industry Act 1994* (Vic) (the **WI Act**). Currently, each of these entities is licensed under the WI Act and as a provision of their license, is required to develop customer contracts in accordance with a *Benchmark Customer Contract* that has been developed by the Essential Services Commission (the **Commission**). The *Benchmark Customer Contract* and a summary of the contract, the *Benchmark Customer Charter*, together

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¹ For more detail on the regulatory environment for water see: Essential Services Commission, 'Regulatory Framework', available at <http://www.esc.vic.gov.au/water101.html>. See also Consumer Law Centre Victoria (CLCV) and Consumer Utilities Advocacy Centre (CUAC), *Access to Energy and Water in Victoria - A research report*, 2004 at 20-23.

contain minimum standards and obligations in relation to matters such as billing, payment, restriction for non-payment, complaints handling and the right to supply.

The three retail businesses are supplied with wholesale water by Melbourne Water. Melbourne Water is a statutory authority and is also regulated under the WI Act. It is also responsible for drainage in the metropolitan areas and the treatment of sewerage.

At present there are a total of 22 water businesses, including the 3 metropolitan businesses, Melbourne Water, 5 rural water authorities and 13 rural-urban water businesses (**regional businesses**) outside of metropolitan Melbourne.² The regional businesses are government owned statutory bodies, regulated under the *Water Act 1989* (Vic) (the **Water Act**). They have only recently come under the regulatory authority of the Commission (discussed further below). While many of the regional businesses voluntarily apply the *Benchmark Customer Contract*, the *Benchmark Customer Charter* or variations of these minimum obligations to customers, this has not always been the case. The Water Act also provides for certain procedures in relation to billing and payment for regional businesses that differ from the minimum standards applied to metropolitan water businesses. For example, the Water Act gives the regional businesses the power to charge interest on overdue accounts³ and to enforce a statutory charge over a consumer's property if a water account is unpaid for more than 3 years,⁴ powers not given to the metropolitan water retailers.

3. Reform of the Victorian water sector

Significant economic reform of the Victorian water sector has been implemented over the last 18 months. This reform has several key drivers, such as the need to improve water and sewerage services by maintaining and improving infrastructure and the growing scarcity of water resources, resulting in an urgent need to promote water conservation. As argued in chapters 3 and 4, water conservation and other reforms to return water to the environment are also necessary to improve the health of Victorian rivers and waterways and to ensure that water resources are preserved for the environment. This section provides an overview of the relevant reforms and argues that the ongoing implementation of such reforms must be done in a socially responsible manner.

The Victorian reforms are taking place in the context of other national and international reform initiatives that are aimed at changing the way in which water resources are managed. In 2004, the Council of Australian Governments (**CoAG**) agreed to the *National Water Initiative*, an agreement between the State and Federal Governments that provides the basis for economic reform of the management of water resources on a national basis, including the implementation of a full-cost pricing principles by water service providers.⁵ In a 2003 report by the Organisation of Economic Co-operation and Development (**OECD**) exploring the social dimension of water pricing (the **OECD Report**), it was noted that many OECD countries have also engaged in considerable economic reform of water services, often with the goal of ensuring that water pricing will better recover the marginal costs of service provision and encourage more efficient and sustainable water usage.⁶

Reform of the regulatory environment

As mentioned above, on 1 January 2004, the Commission became the economic regulator for all water businesses in Victoria. The Commission's role is set out in its legislative framework, namely the *Essential*

² Previously there were 24 water businesses, including 5 rural water authorities and 15 regional-urban water authorities. However, on 1 July 2004, Grampians Region Water Authority was merged with Wimmera Mallee Rural Water Authority and Lower Murray Region Water Authority was merged with Sunraysia Rural Water Authority.

³ *Water Act 1989* (Vic), section 281.

⁴ *Water Act 1989* (Vic), sections 274-280.

⁵ Intergovernmental Agreement on a National Water Initiative between the Commonwealth of Australia and the Governments of New South Wales, Victoria, Queensland, South Australia, the Australian Capital Territory and the Northern Territory, available at http://www.coag.gov.au/meetings/250604/index.htm#water_initiative.

⁶ Organisation for Economic Co-operation and Development (**OECD**), *Social Issues in the Provision and Pricing of Water Services*, Paris 2002 at 29.

Services Commission Act 2001 (Vic) and the WI Act. In addition, the Commission is guided by the Water Industry Regulatory Order 2003 (the **WIRO**), made under the WI Act by the Governor in Council. In accordance with the WIRO, the Commission now regulates the prices and customer service standards for certain prescribed regulated water services across the entire Victorian water industry. These prescribed services specifically include retail water and sewerage services.

Under the WIRO, the Commission has the power to set prices or to approve prices or methods of calculating prices as proposed by the water businesses in a “water plan” if it considers that the procedural requirements set out by the Minister in a *Statement of Obligations (SoO)*, and the regulatory principles set out in clause 14 of the WIRO, are satisfactorily met.

The regulatory principles set out in clause 14 of the WIRO provide new full-cost recovery principles that require the water businesses to provide a sustainable revenue stream, recover all their operating, maintenance and administrative costs and capital expenditure to renew and rehabilitate assets through the prices imposed on their customers.⁷ The WIRO also requires that prices are calculated so as to enable the water businesses to recover a rate of return on assets at 1 July 2004 that are valued in a manner determined by, or at an amount otherwise specified by, the Minister and a rate of return on investments made after 1 July 2004 to augment assets or construct new assets.⁸

In addition, the WIRO requires that the prices, or the manner in which they are determined, provide incentives for the sustainable use of Victoria’s water resources by providing appropriate signals to water customers regarding the costs of providing services, including the costs associated with future supplies and periods of peak demand and/or restricted supply and the choices regarding alternative supplies for different purposes.⁹ The prices set by each business in its water plan must also take into account the interests of customers, including low-income and vulnerable customers.¹⁰ They must also provide the water business with incentives to pursue efficiency improvements and promote the sustainable use of water and enable customers or potential customers to readily understand the prices charged or the way in which they are calculated.¹¹

In 2004, the Commission undertook a process of consultation with the water businesses and other stakeholders on the manner in which it will regulate the prices charged by the metropolitan and regional urban water businesses.¹² As part of this process, the Commission proposed a number of suggested tariff structure options that would reflect the principles set out in the WIRO and expanded on these options in a working paper on its approaches to pricing.¹³ These included:

- increasing the volumetric component of the charges;
- basing usage charges on a rising block structure, so that customers consuming an amount beyond a certain threshold level pay an increased charge; or
- seasonal prices that represent the cost of supplying water at times of the year, for example, charging more for water when there is increased demand during the summer holiday period.¹⁴

The Commission proposed that the water businesses themselves determine the type of tariff structure rather than seeking a “one-size fits all” approach.¹⁵ As part of these reforms, the Victorian Government also set new tariff structures and prices for metropolitan water businesses from October 2004. (This is discussed further below.)

⁷ *Water Industry Regulatory Order 2003 (WIRO)* (Vic), cl. 14 (i-iii).

⁸ As above, cl. 14 (iv,v).

⁹ As above, cl. 14 (vi).

¹⁰ As above, cl 14 (vii).

¹¹ As above, cl. 14 (viii, ix).

¹² Essential Services Commission (the **Commission**), *Consultation Paper No. 1: Economic Regulation of the Victorian Water Sector*, February 2004.

¹³ Commission, *Workshop Discussion Paper: Economic Regulation of the Victorian Water Sector, Approach to Pricing*, March 2004.

¹⁴ As above at 32.

¹⁵ As above at 2.

The Commission has recently completed the process of assessing water plans that were submitted by each water business for an initial 3-year period from 1 July 2005 to 30 June 2008. The *Water Price Review: Metropolitan and Regional Businesses' Water Plans Draft Decision 2005-6 to 2007-8* (the **Draft Decision**) was released by the Commission in March 2005, and is currently open to submissions before a final determination will be made.¹⁶ It appears from the Draft Decision that price rises of up to 6 per cent above CPI are foreshadowed over the next three years.¹⁷ However, the Draft Decision significantly reduced prices sought by a number of water businesses in their draft water plans.¹⁸

In addition to the regulation of prices, in October 2004, the Commission released its final decision on the provisions of the new Customer Service Code (the **Code**) to regulate obligations of metropolitan water businesses and regional businesses from 1 July 2005.¹⁹ The Code creates responsibilities in relation to payment, billing, restrictions and complaints handling as well as the mandatory implementation of policies to assist customers in financial hardship. The Code will supersede the *Benchmark Customer Contract* and will require the drafting of new *Customer Charters* by each of the water businesses that will summarise and elaborate on the obligations that are required under the Code. The new *Customer Charters* must be based on consultation with water customers and will be assessed by the Commission for compliance with the Code in the first half of 2005.²⁰ Compliance with the *Customer Charters* and the Code will then be assessed by the Commission as part of its auditing regime.²¹

A separate process will be undertaken by the Commission to develop a similar customer service code for the supply of water to rural customers.

The White Paper

The Victorian Government released its “White Paper” on water reform, *Securing Our Water Future Together*, (the **White Paper**)²² in June 2004, following a “Green Paper” that set out initial policy proposals, released in October 2003, to which there was 660 written submissions from water businesses, industry, environmental organisations and welfare groups. The White Paper sets out extensive reforms affecting the pricing of water for domestic consumers in metropolitan and regional urban areas, including:

- structuring water prices to reward water conservation;
- ensuring that water prices recover the cost of delivering all water services; and
- funding initiatives that seek to promote the sustainable management of water and to address adverse impacts to the environment associated with its use.

The White Paper also proposed improved water management for agriculture and other businesses, instituting more flexible water trading regimes, and the recognition of environmental water rights to secure the long-term health of Victorian waterways. (This is considered further in chapters three and four.)

Changes to tariff structures

The White Paper announced the introduction of rising block tariffs for domestic users in metropolitan Melbourne from 1 October 2004.²³ The new tariff has three “blocks” measured and billed on a quarterly basis. The first block is set at less than an average usage of 440 litres per day. The White Paper states that the first block is based on an estimate for “essential indoor use” and will be charged at 75 cents per kilolitre.

¹⁶ Commission, *Water Price Review: Metropolitan and Regional Businesses Water Plans Draft Decision 2005-6 to 2007-8*, March 2005.

¹⁷ As above at xii.

¹⁸ As above at xiii.

¹⁹ Commission, *Customer Service Code: Metropolitan and Regional Water Businesses*, October 2004.

²⁰ As above at 20.

²¹ As above at 21.

²² Department of Sustainability and Environment (**DSE**), *Securing Our Water Future Together*, June 2004.

²³ As above at 127.

The second “block” is set at average daily usage levels of between 440 and 880 litres and is based on “more discretionary use” (the White Paper states that roughly 80 per cent of all quarterly bills are less than this amount) and will be charged at 88 cents per kilolitre. The third “block”, above 880 litres per day, will be charged at \$1.30 per kilolitre. The White Paper suggests that the use of quarterly billing is intended to provide a price signal regarding summer water usage, as it is predicted that usage will be more likely to reach an average of 880 litres per day over a quarter in the summer months.²⁴ These new tariffs will be used in combination with fixed water charges and sewerage charges approved by the Commission and the Minister for Water in the *Melbourne Metropolitan Water, Wastewater and Drainage Services Pricing Order 2004*.²⁵

The White Paper notes that prices and tariff structures used by all metropolitan and regional businesses from 1 July 2005 will be determined through the water plan process. As noted above, at the time of writing, the draft water plans had been submitted by the water businesses and the Draft Decision had been released by the Commission.²⁶ As part of this process, a number of regional businesses have moved towards introducing rising block tariffs but not all have done so.²⁷

Environmental contributions

In addition, the White Paper indicates that price increases for retail water are intended to fund new “environmental contributions” by water authorities. These environmental contributions, totalling \$225 million, are to be paid by water authorities over the next four years and will be used for a range of projects to return water to the environment, including:

- encouraging smart urban water projects and large scale water recycling;
- protecting and repairing our water sources;
- meeting Victoria’s national commitments to the Murray River;
- extending water smart farms and sustainable irrigation initiatives; and
- water security for cities, towns, farms and the environment.²⁸

The use of an environmental contribution responds, to some extent, to a need to recognise environmental externalities, that is the cost of water consumption to the environment, of providing water services.²⁹ However, instead of being based on the actual cost of water extraction to the environment, amount of the contribution will, in fact, be based on a percentage of the water businesses’ existing revenues.³⁰

As a result of the introduction of environmental contributions, the White Paper estimates average price rises of an average of 5 per cent for metropolitan and regional urban water consumers and 2 per cent for rural water consumers.³¹ However, the White Paper also notes that actual price changes will depend on a number of factors, including the costs associated with increased customer service levels, future investments on infrastructure and ongoing maintenance of assets by water businesses. As noted earlier, the Draft Decision has indicated price rises of up to 6 per cent above CPI.

²⁴ As above at 127.

²⁵ As above at 128.

²⁶ Commission, above, n 16.

²⁷ South West Water uses inclining block tariffs (and has done since 1996): see South West Water, *Water Plan 2005/2008*, ‘Part 3 – Pricing Proposals’, September 2004 at 2; Portland Coast Water has also proposed introducing a block tariff: see Portland Coast Water, *Water Plan 2005/2008*, ‘Section 5 – Prices’, September 2004 at 75.

²⁸ DSE, above n 22, 129-30.

²⁹ As above at 129.

³⁰ As above at 129.

³¹ DSE, *Our Water Our Future: Victoria’s Action Plan for a Secure Water Future*, June 2004 at 5.

The need for socially responsible implementation of reforms

In summary, reforms to the regulatory and policy framework for water, including the appointment of the Commission as the economic regulator for all Victorian water businesses and the new suite of policy reforms set out in the White Paper, signal the implementation of a number of important initiatives. These include:

- a “full-cost” approach to water pricing, whereby usage charges are based on the real cost of providing water supplies;
- the introduction of new tariff structures for domestic water consumers that are designed to encourage water conservation; and
- price increases to fund new “environmental contributions” (approximately \$225 million over the next 4 years) that will be made by Victorian water businesses for water-related projects.³²

Generally speaking, as a result of these reforms, there are likely to be overall price increases imposed by metropolitan and regional urban water businesses over the next three years and for many water businesses these price increases will be implemented through new tariff structures designed for full-cost recovery. Such pricing should, in accordance with the agenda set out in White Paper, also be designed to encourage water conservation and meet efficiency objectives. This idea assumes that, by ensuring that the price reflects the full-cost of water, this will provide an incentive or “price signal” to consumers to reduce unnecessary water use, thereby promoting water conservation.³³

Given that full-cost pricing has not been used in the Victoria water sector before and in some areas, particularly rural-regional areas, there are significant infrastructure problems, it is likely that this will result in price rises for some water consumers, if not immediately, then over time, particularly in areas where significant capital expenditure is required to maintain (or reach) acceptable standards of water and sewerage services. This is also the trend internationally. For example, the OECD Report notes that:

“...trade-offs between efficiency and equity objectives in the provision of household water services typically occur when moving from an unmeasured to metered charging structure, when rebalancing tariffs away from fixed charges towards volumetric charges, and when increasing fees and tariffs towards full-cost pricing”.³⁴

Given the likelihood of overall price increases as a consequence of reforms, and the importance of water as a human right, it is our view that it is essential that reform is implemented in a socially responsible manner. In particular, it is vital that the implementation of full-cost pricing should not have a disproportionate impact on low-income or vulnerable consumers, or force consumers to cut their costs by reducing their use of water for essential purposes, resulting in poor public health outcomes.

To protect the human right to water, including a safe and affordable water supply and sanitation, we consider it is vital to ensure that consumers maintain access to a minimum amount of clean water for personal use, sufficient for drinking, cooking, washing and cleaning and access to adequate sewage services (an amount we refer to in this chapter as **an essential water supply**), regardless of their income. To achieve this, an essential water supply must remain affordable for low-income and vulnerable consumers.

In our view, it is vitally important that social outcomes are considered when prices and tariff structures are determined and implemented and that a combination of measures are undertaken by both water businesses and the Victorian Government to ensure that the interests of these consumers are protected where price rises occur. Careful consideration of social consequences when choosing tariff structures and setting prices, as well as providing specific measures that specifically accommodate for the needs of low-income and vulnerable consumers is vital to protecting the human right to water.

In the following sections, we consider the causes of affordability problems for low-income and vulnerable consumers as well as a range of measures to address these problems. In discussing these measures, we have

³² DSE, above n 22, at 131, 127-128, 129-130.

³³ DSE, above n 22; OECD, above n 6 at 79-93.

³⁴ OECD, above n 6 at 12.

considered both the structure of tariffs — or the way in which the size of a consumer’s water bill is determined — and other measures, such as the way in which either the income of the consumer may be supported to alleviate affordability problems or some other assistance can be provided to reduce demand through improvements in the efficiency of appliances or reduction of wastage.

4. The human right to water and affordability

As discussed in Chapter 1, adequate access to water should be recognised as a fundamental human right; one that we believe should be formally recognised in Victorian legislation. As such, it is necessary to consider what would be required to ensure that Victorian consumers are able to enjoy this right. In our view, it is necessary that an essential water supply is available to Victorian households on an affordable basis. But what does it mean to say that an essential water supply should be affordable? At the very least, we take it to mean the ability to access an essential water supply without being disconnected or restricted (from mains supply) due to a lack of capacity to pay alone.

Restriction

Victorian water businesses have the power to use a device to restrict the flow of a consumer’s water supply (to a level where it would take approximately one full day to fill a bathtub) in cases of non-payment.³⁵ This measure may be used by water businesses, subject to the requirements of their operating licences, to restrict the supply of a consumer who has failed to pay their water bills. As such it is one way in which consumers may experience affordability problems. Restriction used in this context should not be confused with “water restrictions” – measures to restrict the use of water to certain essential activities which are imposed on all consumers in a particular area to conserve water in times of scarcity.

Complaints to the Energy Water Ombudsman (Victoria) (**EWOV**) regarding the use of restriction are currently at a relatively low-level (compared to complaints in relation to disconnections of gas and electricity services) and also appear to be decreasing in number. Complaints about restriction of water supply were down by 26 per cent in the 1 July 2004-31 December 2004 period, compared to the 1 January 2004-30 June 2004 period, with a total of 14 restriction/disconnection cases reported.³⁶ By way of comparison, there were 831 electricity disconnection cases and 438 gas disconnection cases reported in the 1 July 2004-31 December 2004 period.³⁷ However, affordability issues were the most common reason for water customers to contact EWOV in the 2003-04 period with 45 per cent of all cases investigated relating to affordability issues (similar to 2002-03 levels).³⁸

Up until 1 January 2004, only the 3 metropolitan water businesses (South East Water, Yarra Valley Water and City West Water) were required to report to the Commission in relation to affordability indicators. These indicators include, amongst others, the frequency of restrictions for non-payment. In the 2003-2004 reporting period the Melbourne metropolitan water businesses reported that restrictions for non-payment increased (up 14 per cent from the previous year).³⁹ In total, 231 domestic customers had their water supply restricted. However, restrictions are at a low level historically⁴⁰ and such reporting shows that restriction for non-payment has generally decreased in metropolitan areas, indicating some improvement overall in access to water supply for those with payment difficulties. Unfortunately, there is no comparable data for regional urban water customers.

³⁵ Metropolitan businesses have the power to restrict for non-payment under section 85(1)(g) of the WI Act while rural and regional urban businesses derive their power from section 141(1)(c)(g) of the Water Act.

³⁶ Energy Water Ombudsman (Victoria) (**EWOV**), *Resolution 19*, March 2005 at 13.

³⁷ As above at 12-13.

³⁸ Commission, *Melbourne Water and Sewerage Retailers – Performance Report July 2003-2004*, December 2004 at 41.

³⁹ As above at 36.

⁴⁰ As above.

Other measures of affordability

Restriction of water supply for non-payment is not the only way in which consumers experience affordability problems. Some consumers who cannot afford to pay their utility bills (including gas, electricity and water) divert spending from other essential expenses to pay their bills, including food, rental payments, clothing or school fees.⁴¹ For example, in response to a recent survey of 33 low-income households conducted by the Consumer Law Centre Victoria seeking qualitative evidence on the use of credit for utilities, telecommunications and essential goods and services, one young family stated that they “usually cut down on food to pay for electricity, gas and water”.⁴² Another respondent noted that:

“Our priority is water, electricity and gas over everything else. You have to run your fridge, you don’t want cold showers, you need to cook food, heat your children. When you don’t earn much money you tend to spend more time at home because you can’t afford to go anywhere, so you need the home to be warm and comfortable.”⁴³

Affordability problems may also contribute to increased debt levels, either through the household accumulating debts to a water business or accessing credit (often at a high cost) from other sources to pay a bill.⁴⁴

Financial stress can also lead households to ration their usage of water (and/or gas and electricity) to a level that is lower than is required to maintain an essential water supply to manage high utility bills.⁴⁵ This may include reducing water use to levels below that necessary to preserve adequate standards of health and sanitation.

The OECD Report also suggests a trend occurring in other countries where economic reform of the water industry has occurred. The OECD Report notes that:

“For most households in OECD countries, the goal of a safe and affordable potable water supply has been achieved. However, there is evidence that, for a significant minority, the ability to pay for water even for essential uses fails to match its cost. Concern over this situation is at its strongest when households with low incomes (or persons with health conditions giving rise to high water demand, e.g. for hemodialysis) are subject to individual water metering; financial hardship may be an incentive for such consumers to cut back on essential water use, probably resulting in damage to personal and public health”.⁴⁶

In our view, a truly affordable water supply is one in which consumers not only maintain an unrestricted connection to a water service but do not need to reduce their spending on other essential goods and services, limit their usage below the level of an essential water supply or service large amounts of debt in order to remain connected to an unrestricted supply.

5. Causes of affordability problems

In order to discuss the most efficient and effective ways in which to counter affordability problems, we must first have some understanding of the main causes of the problems.

Affordability problems for water consumers may be caused by an intersection of various factors, including: inadequate income; inefficient appliances and poor quality housing; household types and personal

⁴¹ Brotherhood of St Laurence, 'Electricity, gas and water - costs and choices for vulnerable households,' *Changing Pressures*, Bulletin No 5, February 1998; See also a Western Australian comparison, Western Australian Council of Social Services, *Would you like a little bit of heat with that trickle of water?* – A report on the results of research into the cost of essential services to Emergency Relief Agencies and their clients, 2003 at 3.

⁴² CLCV, *Do the Poor Pay More?: A Research Report*, January 2005, Appendix A at 36.

⁴³ As above at 32.

⁴⁴ A Stewart, 'Do the Poor Pay More for Utilities Services?' in CLCV, above n 42 at 62-3.

⁴⁵ Brotherhood of St Laurence, above n 41 at 2.

⁴⁶ OECD, above n 6 at 30.

circumstances and external factors such as tariff structures and geographical factors (where remote locations may be the cause of increased costs of supply).⁴⁷

Low income

One cause of affordability problems is financial stress due to poverty.⁴⁸ It is often those who are most vulnerable who will suffer from a lack of capacity to pay a water bill, including those on fixed incomes. The *Victorian Utility Consumption Survey 2001*, prepared by Roy Morgan Research for the Department of Human Services (the **DHS Survey**) found that 13 per cent of concession holders reported difficulties paying for water bills in 2001, compared with 9 per cent of non-concession holders.⁴⁹ Australian Bureau of Statistics data also shows that low-income households spend proportionally more of their income on energy and water than do households with higher incomes.⁵⁰

Poverty as a general cause of affordability problems is not dealt with in more detail in this chapter but it is clear that lower income levels will inevitably contribute to some degree to the ability to pay for water. This is particularly the case in the context of price rises, as poorer consumers will have to pay a greater proportion of their income on household water use than those with higher incomes. This will inevitably cause difficulties if the consumer's lack of ability to pay is so significant that it affects their ability to access an essential water supply.

Poor quality housing and inefficient appliances

Poor quality housing and inefficient appliances can also contribute to affordability problems for low-income consumers, leading to greater consumption of water and higher bills. However, many low-income consumers may be limited in their ability to increase water efficiency.⁵¹

Low-income consumers are more likely to rely on rental housing (both public and private) due to the decreasing affordability of home ownership.⁵² Low-income tenants are also less likely to be able to afford high quality housing. Inefficient and/or faulty appliances, including single flush toilets, inefficient shower roses and washing facilities and leaking pipes most likely will be outside the control of tenants, as the maintenance of these appliances is usually the responsibility of the landlord.⁵³

Low-income consumers living in their own home are also less likely to be able to afford high quality housing and may find it difficult to afford to replace inefficient appliances, such as washing machines or single-flush toilets, and make necessary repairs to increase water efficiency due to the upfront costs of repairs and retrofitting. Options such as fitting rainwater tanks and household systems to reuse grey water on gardens also carry an initial expense that is likely to be prohibitive for many low-income consumers.

⁴⁷ Stewart, above n 44; CLCV and CUAC, above n 1..

⁴⁸ See generally, Senate Community Affairs References Committee, *A hand up not a hand out: Renewing the fight against poverty*, March 2004 at 191-193 for a discussion regarding the difficulties faced by low-income consumers with regard to accessing utilities.

⁴⁹ Roy Morgan Research for Department of Human Services (**Roy Morgan**), *Victorian Utility Consumption Survey 2001*, June 2003 at 180.

⁵⁰ The Australian Bureau of Statistics, *Household Expenditure Survey 1998-99, 2000*; see also Brotherhood of St Laurence, above n 41 at 2.

⁵¹ Victorian Council of Social Service (**VCOSS**), *State Budget Platform, 2003* at 90; Brotherhood of St Laurence, above n 41 at 2.

⁵² Brotherhood of St Laurence, above 41 at 2. On the issue of decreasing housing affordability generally see the Australian Council of Social Service, *Submission to the Productivity Commission's Inquiry into Home Ownership*, 2003, and T Burke and H Short, Australian Housing and Urban Research Institute, *Analysis of expenditure patterns and levels of household indebtedness of public and private rental households, 1975 to 1999*, July 2002.

⁵³ VCOSS, above n 51 at 90.

Household specific problems and personal circumstances

Certain households will have particular needs that can (or may have the potential to) result in affordability problems.

For example, large families will have greater needs for water than smaller families. If prices are based on a volumetric measure of water use these households are more likely to pay more for their essential water supply than smaller households. Thus, the DHS Survey found a trend for average water consumption to increase with household size, finding that one person households used 196 kilolitres in 2001 and households with 4 or more people used 324 kilolitres.⁵⁴ Similarly, some people who live in large shared households may be more likely to use a larger amount of water for essential purposes than smaller households. (The effect of rising block tariffs on larger households is also discussed in more detail below.)

People will also use more or less water depending on their stage of life and the needs of people who live in their households. Households that include people with illness or disabilities, older people or people at home with young children are likely to spend more time at home, and thus are more likely to require a greater amount of water during the day, as are those who are unemployed.⁵⁵ Some illnesses may also give rise to a need for an increased level of water supply. Some of these households may also be more vulnerable due to reliance on a fixed income.

In addition, certain life events, such as an accident, unexpected illness, unemployment or relationship breakdown can also create an inability to pay water bills when they become due. Short term inability to meet bills, including water and other essential services such as electricity and gas services, can also create a debt spiral for some consumers, when they are forced to borrow money from high-cost or fringe credit providers.⁵⁶

Tariff structure for retail water services in Victoria

In Victoria, charges for retail water services were previously structured in accordance with a two-part tariff that includes a fixed service fee and a variable usage charge, imposing a flat price per kilolitre of water consumed.⁵⁷ Until recently, in the metropolitan sector, the ratio was 30 per cent fixed service fee compared to 70 per cent usage fee. In the regional sector, the ratio was reversed, with 70 per cent of the fee being a fixed service fee and only 30 per cent being a usage charge.⁵⁸

A two-tariff system like this can lead to inequitable results. The use of a high fixed service fee means that those customers using less water are paying more per unit overall than those who use more water. It is arguable that some consumers on low incomes use less water than other water customers. For example, the DHS Survey found that non-concession customers used 287 kilolitres of water in 2001 while households using concessions consumed on average 257 kilolitres and of those, aged pensioners consumed only 233 kilolitres.⁵⁹ As such, it is arguable that a two tariff system, particularly where a high fixed tariff structure is used may lead to a disproportionate price impact on some low-income customers, particularly aged pensioners.⁶⁰

⁵⁴ Roy Morgan, above n 49 at 85-86.

⁵⁵ Brotherhood of St Laurence, above n 41 at 2.

⁵⁶ A Bondar and E Collier, 'Do the Poor Pay more for Essential Household Goods and Services?' in CLCV, above n 42 at 72-73 and Stewart, above n 45.

⁵⁷ Commission, above n 13 at 5; DSE, above n 22 at 90.

⁵⁸ DSE, above n 22 at 90.

⁵⁹ Roy Morgan, above n 49 at 85.

⁶⁰ See further: Gavin Dufty, *Securing Our Water Future: Green Paper for discussion: Submission to Department of Sustainability and Environment from The Society of St Vincent de Paul*, Victoria, (November 2003) at 6 and Victorian Council of Social Service, *VCOSS Response to Securing Our Water Future Released by the Dept of Sustainability and Environment* (October 2003) at 5. VCOSS state that the current tariff structure has 'significant welfare and environment impacts' noting that high fixed charges lift the average unit price for households with low volumes of consumption, while lowering the average unit price for high volume users, sending contradictory signals.

Penalties for late payment

As noted above, regional businesses have the ability to charge interest on overdue amounts. Such interest essentially amounts to a penalty for late payment of water bills. Further, the Code does not strictly prohibit penalty fees for late payment to be imposed by metropolitan businesses.⁶¹ While economic theory suggests that cost reflective pricing is necessary for the optimum functioning of a competitive market, it is doubtful that late payment fees send price signals to which all late paying consumers can respond. As Anna Stewart noted in the recent report, *Do the Poor Pay More?*:

“If the purpose of a late payment fee is to encourage timely payment, there is an implicit assumption that the consumer will be able to pay on time to avoid the fee. However, a low-income consumer already unable to pay the bill on time due to a lack of funds will not subsequently be in a position to pay the bill on time in the event that a late payment will otherwise be imposed. Put simply, the consumer either has the money to pay the bill on time or they do not. Accordingly, late payment fees, whether they be imposed for late payment of utilities bills or any other bills for goods and services, place a disproportionate burden on consumers experiencing poverty, including the working poor”.⁶²

The same could be said for penalty interest charges. Considering that a low-income household is more likely to be paying their water bills after the due date than more affluent households, interest charges place a disproportionate burden on low-income households, adding to the overall cost of the service.

6. Tariffs and the impact of tariff structure reform on affordability

As noted above, the Commission has proposed a number of different tariff structures that may be implemented by water businesses in order to comply with the requirements of the WIRO. The various draft Water Plans submitted by each of the water businesses also reveal that a range of different tariff structures will be used across Victoria in the next three years.⁶³ The potential impact of a number of the main types of tariff structures on low-income and vulnerable consumers is considered below.

We note that, in a number of other OECD countries, the structure of the tariff itself has also been used as measure to address affordability problems. For example, the use of alternative or “social” tariffs that are specifically adjusted to suit particularly large families or low-income consumers have been used to ensure that water prices are equitable, with varying levels of success.⁶⁴ For example, in the United Kingdom and Norway, customers paying a flat fee can opt for a meter, while customers already paying a metered tariff can switch to a special low-volume tariff.⁶⁵

Increasing the volumetric component of the charges

Increasing the ratio of volumetric charges as compared with fixed charges could increase the incentives to consumers to reduce their water usage. This could occur through closer alignment of usage with the customer’s bill as customers who use more water would be required to pay more. However, this structure still uses a flat volumetric charge that provides no particular penalty or price increase for the use of very large volumes of water and for this reason it may fail to reduce water consumption overall. As such, it does not provide adequate price signals to reflect the difference between non-discretionary use of water (for example, for drinking, cooking and washing) compared to discretionary use of water (for example, for use on gardens and lawns).⁶⁶

⁶¹ Commission, above n 19, clause 6.5: ‘a water business must not impose other charges in respect of outstanding amounts, *unless otherwise approved by the Commission*’ (emphasis added).

⁶² Stewart, above n 44 at 66.

⁶³ The Water Plans of each business can be accessed on the Commission's website at <http://www.esc.vic.gov.au/water875.html> .

⁶⁴ OECD, above n 6 at 93-99.

⁶⁵ As above at 94. See also, discussion of the so-called ‘Flanders’ tariff in Annex B of the OECD Report.

⁶⁶ DSE, above n 22 at 127.

With regard to the impact of this structure on low-income and vulnerable consumers, if prices rise overall, as foreshadowed in the White Paper and the Commission's Draft Decision, the use of this model may exacerbate affordability problems experienced by some low-income and vulnerable consumers through the increased costs for both non-discretionary and discretionary use of water. This would be particularly so for larger households and families who may have a greater volume of non-discretionary water use.

Seasonal Pricing

In some regional areas seasonal pricing is already used to reflect the greater demand in summer holidays. For example, Westernport Water has previously used this method of pricing.⁶⁷ It is noted, however, that this area includes a tourist area that takes in substantial numbers of visitors only during the summer months. One of the most common criticisms of an increased summer tariff is that it fails to encourage water conservation throughout the rest of the year, and so fails to reduce water usage overall. In addition, a blanket price increase during the summer months may have a disproportionate effect on those who have the least ability to reduce their water usage, such as large households and families.

Rising block tariff

The use of rising block tariffs has been explored in the White Paper and by the Commission in its various consultations and has also been given considerable support by stakeholders, provided that the impacts on low-income or vulnerable customers are minimised.⁶⁸ As noted above, a version of rising block tariff has also been introduced by the Government in the three metropolitan businesses effective 1 October 2004.

Rising block tariffs are thought to create greater incentives to consumers to reduce wasteful water use by increasing the price of water after a threshold level of usage, or block threshold, is reached. This method of structuring tariffs is designed to send a stronger price signal to consumers to conserve water above the threshold level. The effect of rising block tariffs is that the reduced cost of water use below the threshold level will create a saving on a customer's bill but the higher cost of water above that level will result in a significantly higher bill.

It is also worth noting that rising block tariffs will, in effect, also act as a seasonal pricing measure as higher discretionary water usage in the summer months will be penalised by the higher usage charge.⁶⁹

Under the new metropolitan tariffs, it is possible that the new charges will not result in a large increase in their bill. Indeed, some consumers, for example, people living in apartments, may pay less than previously if they do not use much water.

However, particular groups of vulnerable customers may be adversely affected by rising block tariffs, where the cost of water is not shared equally. It has been widely recognised that large families and large shared households, will tend to have higher non-discretionary usage and as a consequence may have to pay more for their non-discretionary usage of water under this tariff structure.⁷⁰ The White Paper recognises this by requiring the three metropolitan water businesses to implement special assistance packages for large families

⁶⁷ See Westernport Water, *Water Plan 2005/2008*, available at <http://www.esc.vic.gov.au/water876.html>.

⁶⁸ See support for block tariffs in Dufty, above n 60, and VCOSS, above n 51. cf J Welsmore, *Price Structures to Reduce Demand for Water*, Submission to IPART, 1 March 2004, available at <http://www.piac.asn.au/publications/pubs/piacwaterbalance.pdf> in which Welsmore argues that block-pricing does not provide adequate price signalling to drive demand responses and noting the detrimental effects on large households. See also Public Interest Advocacy Centre Utilities Consumers Advocacy Program (PIAC), Occasional Policy Paper No 7, *Water Pricing and Vulnerable Customers: Profiling Low-income Households*, November 2004, available at <http://www.piac.asn.au/publications/pubs/UCAP%20Occasional%20Policy%20Paper%20No.7.pdf>.

⁶⁹ See further Independent Pricing and Regulatory Tribunal of New South Wales (IPART), *Investigation into Price Structures to Reduce Demand for Water in the Sydney Basin Issues Paper*, December 2003, available at <http://www.ipart.nsw.gov.au/files/OP-24.pdf> at 19.

⁷⁰ See also Welsmore above n 68 at 2-3 and PIAC, above n 68 at 15.

(discussed further below). However, similar measures do not appear to be contemplated for any of the regional businesses, despite the fact that some will also be implementing rising block tariffs.

The amount of usage required to reach the threshold level (or levels) and the price determined for each level could also have a notable impact on a customer's bill. The Commission, in its 2004 working paper on approaches to pricing notes that water businesses who consider using rising block tariffs will need to carefully consider the level at which the first block should be set, so as to ensure that non-discretionary water use is affordable for vulnerable households.⁷¹ The levels at which subsequent blocks are set and the price relativities between blocks could also make a significant difference to the effectiveness of such a tariff and its impact on low-income and vulnerable consumers. This is because the tariff is designed so as to reward low water usage with lower prices and reserves the highest prices for extreme water users.

Considerable thought was given to the level of each block in a 2003 paper by Gavin Dufty on behalf of the St Vincent de Paul Society in response to the Government's Green Paper.⁷² Dufty suggests that the blocks used in a rising block tariff should be relative to the levels of consumption consistent with levels of restrictions that are placed on water usage to ensure the preservation of important water reserves. He suggests setting the first block to coincide with the consumption levels during stage 2 water restrictions, the second block to coincide with consumption levels during stage 1 water restrictions and the final block set from normal or no restriction levels.⁷³ This approach ensures, in particular, that the first block is set at a level that is roughly the level of average indoor water use, thus preserving essential water use within the first block. This approach appears to be taken up in the recent reform to metropolitan tariffs as described above in section 3 of this chapter, given that the Government has estimated that the first block will be commensurate with "essential indoor use".⁷⁴

The use of a special tariff or "social tariff" that exempts a consumer from paying higher prices when their usage brings them into a higher or more expensive block could also be implemented where large families or consumers with particular vulnerabilities (such as a consumer who uses a large amount of water as a result of particular medical treatment) are identified by the water business. Such a tariff could be used in conjunction with other measures to address water conservation issues and address any wastage issues. (These measures are discussed in more detail below.)

It might be argued that taking into account the social implications when setting tariffs will distort the price signal to consumers, thereby defeating the objective of full-cost pricing. However, prices are set to meet a range of objectives — and these must include a balance of economic efficiency, positive environmental outcomes and, most importantly in the context of water, considerations of public health and human rights. This is also the clear intention of the WIRO, which provides for the consideration of both environmental outcomes and the needs of low-income and vulnerable consumers.⁷⁵

Recommendations:

- **That rising block tariffs be introduced across the water sector in preference to increases to a flat volumetric charge or a flat price increase during summer months. Such tariffs should, ultimately, be implemented in regional areas, as well as the metropolitan areas. However, care needs to be taken to ensure that the first block is set at a level that ensures that an essential water supply is affordable and should only be implemented in the context of other measures to address affordability problems for low-income and vulnerable consumers.**
- **That further consideration be given to the potential effectiveness of a special tariff for consumers who are in particularly vulnerable circumstances such as very large families.**

⁷¹ Commission, above n 13 at 6.

⁷² Dufty, above n 60.

⁷³ Dufty, above n 60 at 7. For a description of stage 1 and 2 water restrictions see <http://www.savewater.com.au/default.asp?SectionId=469&SortTag=560>.

⁷⁴ DSE, above n 22 at 127.

⁷⁵ WIRO, cl 14.

7. Income support and other demand-side measures to address affordability problems

Overall, the implementation of new price structures and price increases may be more amenable for low-income and vulnerable consumers if they are used in conjunction with income support and other demand-side measures to alleviate affordability problems. A number of such measures and their potential impact on affordability problems are discussed below.

Customer service standards and consumer protection measures

Significant tools to address affordability problems are adequate standards of customer service and consumer protection measures. These include, for example, consistent measures to ensure the minimisation of billing errors, a fair process for dealing with payment difficulties and non-payment and fair collection and complaints handling procedures

As discussed earlier, the Code will now apply to all metropolitan and regional water businesses in Victoria, from 1 July 2005.⁷⁶ Importantly, the Code requires all water businesses to offer customers the right to flexible payment options and to an instalment plan that is set at a level that takes into account the customer's ability to pay.⁷⁷ The Code also provides consistent measures in a range of other areas, including the steps that must be taken before any restriction or legal action can occur as a result of non-payment and the introduction of mandatory hardship policies. (Hardship policies are discussed in more detail below.)

However, the Code cannot address all of the important consumer protection issues that arise in the water sector. Significantly, the regional water businesses retain the ability under the Water Act to charge interest on arrears⁷⁸ and to exercise a statutory charge against a consumer's property if the arrears are outstanding for more than 3 years.⁷⁹ While not all regional water businesses exercise this right to charge interest, regional financial counsellors have reported that some water businesses do not have appropriate collection policies, allowing outstanding debts (between \$1,000 and \$10,000) to accumulate over a significant period of time, all the while accruing interest.⁸⁰ This creates significant risks for a low-income consumer if he or she has not been offered an appropriate payment plan or hardship grant, particularly in relation to a large debt (for example, a debt associated with a new sewerage connection). As noted above, the charging of interest on overdue accounts can exacerbate affordability problems for low-income consumers who have not been able to pay their bills on time, creating additional costs for those who can least afford to pay them.

It is also significant that the three metropolitan retail water businesses do not have an equivalent right to charge interest or to automatically acquire a charge over a property in relation to arrears, so in this sense, the charging of interest also discriminates against customers who are living outside the metropolitan area.

For these reasons, we are of the strong view that the right to charge interest and the right to a charge over property should be removed from the Water Act, at least in relation to domestic supply. In the meantime, it would seem appropriate for all regional water businesses to self impose a moratorium on charging of interest against all concession holders.

Recommendations:

- **That any potential for the implementation of late payment fees for water be eliminated from the Customer Service Code.**
- **That changes to the Water Act be implemented to remove the ability of regional businesses to charge interest and to impose a statutory charge over a consumer's property.**

⁷⁶ Commission, *Consultation Paper No 2. Draft Customer Service Code*. above n 19.

⁷⁷ As above, cl 5.2.

⁷⁸ Above n 3.

⁷⁹ Above n 4.

⁸⁰ Interview with John Mumford, Financial Counsellor, Bass Coast Regional Health, 25 September 2004.

- **That all regional-urban water businesses self impose a moratorium on charging of interest against all concession holders.**

Hardship policies

As set out above, whatever pricing structure is used there may well be price increases that adversely affect low-income and vulnerable consumers. In particular, large families or households may be penalised under any of the suggested price structures because they will necessarily use a higher volume of water for non-discretionary purposes. For this reason, whichever pricing structure is used, in our view, effective financial hardship policies must be mandatory and compliance with them comprehensively audited by the Commission.

EWOV's 2003 report, *Resolution 16*, included a special report on disconnection and restriction of supply in the energy and water sectors.⁸¹ This report states that the majority of EWOV's cases involve disconnection of gas, electricity or water or restriction of water and that this "invariably occurs in conjunction with stressful and difficult customer circumstances, and usually results from account arrears."⁸² However, EWOV also found that the majority of capacity to pay issues in the water sector were being satisfactorily addressed by the water businesses — and that was directly attributable to the hardship initiatives of the three metro water retailers and the regional urban authorities that had developed financial hardship policies.⁸³

In addition, in 2002/03 there was a 33 per cent overall decrease in the number of Utility Relief Grants approved on the basis of applications by the three metropolitan water businesses — the water businesses reported that this was due to earlier identification of customers experiencing difficulty in paying and placed on an affordable payment plan (City West Water) and the provision of alternative payment plans and information to concessions holders (Yarra Valley Water).⁸⁴ We note that in 2003/04 there was a further decrease of 8 per cent use of these grants.⁸⁵

Case study⁸⁶ - dealing with financial hardship issues

Helen*, a sole parent with one child, had her water supply restricted in October 2003 after she failed to maintain payments of \$20 per fortnight, which were too high for her to afford. The water authority had originally demanded payments of \$50 per fortnight. Helen found the water authority rude to deal with and felt that it would not listen to her when she tried to explain her financial difficulties. After she contacted EWOV and was taken off restrictions, EWOV helped to negotiate an instalment payment plan of \$10 per fortnight. Having been able to maintain these payments, Helen agreed to increase her payments to \$20 per fortnight again. However, unlike before, she was given the telephone number for a specific staff member of the water authority to contact if she again experiences financial difficulties in maintaining the \$20 payments.

*Name changed to protect privacy

Financial hardship policies ideally apply to customers suffering from both long-term and short-term financial hardship and offer protection from restriction while a debt to a water business is being repaid.

⁸¹ EWOV, *Resolution 16*, July 2003.

⁸² EWOV, as above at 6.

⁸³ EWOV, "Benchmarking Water Industry Performance: EWOV's Unique Perspective", speech to VicWater conference, 18 September 2003, available at http://www.ewov.com.au/pdfs/VicWater%202003/VicWater_Sep03.doc at 9.

⁸⁴ Commission, *Melbourne Water and Sewerage Retailers – Performance Report July 2002-2003*, December 2003 at 33-34.

⁸⁵ DHS Concessions Unit, *Annual Report 2003-2004: Helping lower income Victorians afford essentials*, April 2005 at 25.

⁸⁶ This case study is reproduced from CLCV and CUAC, above n 1 at 65.

Such policies should outline guidance for early identification of financial hardship and provide flexible solutions to the repayment of debts, such as rewards for regular payments. For example, Yarra Valley Water automatically credits a sixth payment after five consecutive on-time regular payments have been made, through its *Arrange and Save* program.⁸⁷ In cases of extreme financial hardship, policies should also provide for partial or full waiver of debts.⁸⁸

Recommendations:

- **That hardship policies should include elements of debt forgiveness, particularly where extreme hardship is experienced.**
- **That hardship policies be implemented by water businesses in the context of a range of other customer protections and adequate complaints handling policies and procedures, including fair procedures for debt collection.**

Concessions

The Victorian Department of Human Services (**DHS**) provides a number of concessions that are available to water consumers.

Water and sewerage concessions

The water and sewerage concession offers a reduction in the water bill for eligible concession holders. The Government recently announced extensive reforms to the water and sewerage concession.

The previous concession offered 50 per cent off water and sewerage bills for eligible concession card and Health Care Card Holders. This concession was previously capped at \$135 per annum, with a maximum of \$67.50 applicable for water charges and \$67.50 applicable for sewerage charges. From 1 July 2004 the concession was indexed, taking the cap to \$138. In addition, from 1 October 2004, the cap increased to \$146 and it will increase again from 1 July 2005 to \$150, after which time the cap will be indexed by CPI. In addition, from 1 October 2004 the cap has applied to the whole bill rather than separately providing concessions for water and sewerage charges, with a separate cap for each service. However, the capped concession is lower for customers who pay for water only or sewerage only (\$75 from 1 July 2005).⁸⁹

Finally, the previous concession only allowed Health Care Card Holders to access 50 per cent of volume charges, whereas other concession holders are able to receive 50 per cent off fixed service and volume charges. This change enables Health Care Card Holders better access to the concession where they own their own home.

Importantly, the amount of the concession will no longer decrease with inflation. This is more appropriate, given that price increases up to 6 per cent above CPI are foreshadowed in the Draft Decision.⁹⁰

Other concessions

Other concessions available to consumers include *Utility Relief Grants*. These are administered by DHS and are one off payments to assist consumers suffering from a temporary financial crisis. DHS also provides the *Capital Relief Grants*, which assist consumers with capital expenses, such as pipe repairs, improvement or replacement of appliances, such as a hot water service, which they could not otherwise afford and a hardship relief grants scheme that provides funds for a sewerage connection. A *Life Support Machines Water Concession* provides a concession on the water usage charge associated with the operation of a haemodialysis machine and a *Carted Water Rebate* assists consumers who are not connected to mains water.

⁸⁷ Yarra Valley Water, *Droplet e-newsletter*, ed 2, December 2004 available at <http://www.yvw.com.au/for-home/publications/droplet-ed02.html>.

⁸⁸ See further CLCV and CUAC, above n 1 at 110-4.

⁸⁹ DSE, above n 22 at 136-7.

⁹⁰ Commission, above n 16.

Although the concessions reforms outlined above have gone some way to addressing the price changes that will occur, they are not tailored in any way to account for the number of people living in a household. This is problematic because the introduction of rising block tariffs will tend to impact more on larger households.

In addition, although concessions have been reviewed to keep pace with CPI increases, as noted above, it is clear that price increases envisaged by the Government and the Commission will be above CPI, at least in the next 3 year period. For this reason, concessions are bound to fall behind, creating an increased impact on those households eligible for concessions unless there is a mechanism for regular review of the concession to keep pace with price increases.

Recommendation:

- **That concession amounts and frameworks, including the concession cap level, are regularly reviewed to keep pace with increased water prices.**

Measures to increase water conservation – access and affordability

It is vitally important to consider not just the price of water but also the way in which the water sector is structured as well as the various elements that affect affordability, including water efficiency. Many measures designed to encourage water saving are also important tools in improving the affordability of water for low-income and vulnerable consumers. Water conservation programs currently operating, provided by both the DHS and the Department of Sustainability and Environment (DSE), are discussed below.

The Water Conservation Assistance Pilot Program

The Water Conservation Assistance Pilot Program is provided by the DSE and is designed specifically to assist low-income consumers to conserve water in their homes.⁹¹ It provides one off grants of up to \$500 to consumers who are eligible for a concession card to assist with the assessment, repair, maintenance and replace of water related plumbing fixtures. It only applies in six nominated local government areas and a consumer must own their own home and be connected to a reticulated water supply.

The program provides rebates for fixtures such as AAA showerheads, flow regulators or flow control valves on kitchen, bathroom and laundry taps, and dual flush toilets. There are also funds for maintenance work such as the repair of leaking taps, toilets and shower roses or the replacement of tap washers, aerators and flow regulators on taps. Once a consumer has applied for the service an authorised plumber may be engaged to audit the person's home and carry out the necessary work. The plumber then invoices the local water authority for the amount, up to \$500.

Such a scheme provides assistance particularly to concession card holders, who would not otherwise be able to afford to fully audit their home and acquire the products and maintenance services to improve water efficiency.

Unfortunately, the scheme is limited at present because it only applies to six specific areas across the State. Further, it is only available to homeowners or people purchasing their own home. As such, many low-income tenants who hold concession entitlements are not eligible for assistance. The scheme is scheduled to run until 30 June 2005 after which time it will be reviewed and possibly implemented across the State.

Smart Homes Program

Another scheme, the Smart Homes Program, is managed by the concessions unit of the DHS and assists concession households in financial hardship to replace inefficient or defective household fixtures causing

⁹¹ DSE, *Water Conservation Assistance Pilot Program* (brochure), October 2003, available at [http://www.ourwater.vic.gov.au/ourwater/dsenowof.nsf/fid/-CF227A9ED2376190CA256F1E0023F26D/\\$file/Conservation.pdf](http://www.ourwater.vic.gov.au/ourwater/dsenowof.nsf/fid/-CF227A9ED2376190CA256F1E0023F26D/$file/Conservation.pdf).

high water bills, such as leaking taps and inefficient showerheads.⁹² During a Smart Homes water audit, a plumber will also provide education and information to assist customers to reduce their water consumption. In 2002-03 DHS assisted 84 households on this scheme, increasing to 327 households in 2003-04.⁹³ It is voluntary for water businesses to partake in this program and currently only Yarra Valley Water and South East Water are involved (Yarra Valley Water is currently the major program participant, with 97 per cent of participating households during 2003-04).⁹⁴

The experience of Yarra Valley Water's participation in the Smart Homes Program demonstrates the significant benefits that the program has not only to consumers through decreased water bills but to water conservation generally. Yarra Valley Water's recent review of the program (which has been expanded to tenanted properties since February 2005⁹⁵) identifies that:

- customers' accounts reduce by an average of 30 per cent;
- customers save 120 kilolitres per year on average; and
- in dollar terms, customers save on average \$80 per year in their water usage (adding sewerage disposal charges, this could mean an average saving of \$150 off the consumption portion of their water bill).⁹⁶

Recommendation:

- **That the Water Conservation Assistance Program, Smart Homes Program or similar assistance be expanded so as to increase water efficiency in low-income households across all water businesses.**

Water Smart Gardens and Homes Rebate Scheme

The DSE also provides the Water Smart Gardens and Homes Rebate Scheme. This program is accessible to all Victorian water consumers connected to a reticulated water supply. It provides rebates for specific products designed to reduce water usage that are purchased and installed before 30 June 2006.⁹⁷ This initiative has involved a \$10 million commitment by the Government to provide incentives to Victorian consumers to conserve water. For example, the scheme offers the following rebates:

- \$300 for a rainwater tank with a connection to a toilet;
- \$500 for a grey water permanent tank system that recycles water from laundries and bathrooms for use on the garden or in the toilet;
- \$10 for a water efficient shower rose, rated AAA or better;
- \$30 for a water conservation home audit.

The rebate is then deducted from the consumer's next water bill.

The White Paper states that there has been an "overwhelming response" to the rebate scheme, with 63,000 rebates being approved from 1 January 2003 to 13 May 2004.⁹⁸ During October and November 2003 rebates were also available for the purchase of AAAA washing machines and during that time 13,000 rebates were provided. However, it is clear that consumers suffering from financial difficulties are not going to be the main beneficiaries of this program, where only a relatively small amount of the cost is rebated.

⁹² See DHS Concessions Unit, *Concessions on Rates, Water and Property*, available at http://www.dhs.vic.gov.au/concessions/Guide2003/g_rates.htm.

⁹³ See www.savewater.com.au for further details of the rebate scheme.

⁹⁴ DHS Concessions Unit, above n 85 at 28.

⁹⁵ As above.

⁹⁶ Yarra Valley Water, *Droplet e-newsletter*, ed 3, April 2005.

⁹⁷ Yarra Valley Water, *Smart Homes Review*, presentation at Customer Support Annual Financial Counsellors Workshop, 17 March 2005.

⁹⁸ See DSE, *Our Water Our Future: Rebates*, available at <http://www.ourwater.vic.gov.au/ourwater/dsenowof.nsf/childdocs/-EA9C2DDDD6208DCFCA256F490081F689?open>.

⁹⁸ DSE, above n 22 at 102-3.

Specific measures to assist large families.

The White Paper announced the implementation of water savings packages for large families to be implemented by the three metropolitan water businesses. Under this proposal, families with five or more people who have experienced an increase in winter usage of \$20 due to the new pricing structure and are experiencing difficulty paying their new water bills are eligible.⁹⁹ Eligible households may apply to their water authority for a water savings package that may include free water saving products such as low flow control valves or shower roses or free plumbing advice or services. The detail of these programs is not yet widely available but these are necessary measures to promote both water conservation and to address affordability issues for large families subject to rising block tariffs. In our view, such programs would also be valuable for implementation in regional urban areas – particularly where rising block tariffs are being introduced.

Recommendation:

- **That new water saving measures for large families should be implemented in regional urban areas as well as metropolitan areas where rising block tariffs are introduced.**

Access to water conservation schemes for all water consumers

One of the limitations of all of these schemes is their lack of applicability to customers who are not connected to a reticulated water supply. Although these consumers do not pay a water bill in the same way as metropolitan and regional urban customers, they may still be required to purchase water in times of drought, incurring substantial costs. It is vital to recognise that these schemes have a positive impact on both affordability and reduction of unnecessary water usage. As a public policy outcome, it remains important that consumers who are not connected to the mains water supply are also encouraged to conserve water, particularly in areas in which the environmental effects of taking water from groundwater or waterways may have a particularly detrimental effect. However, the current programs do not cater for these consumers' needs in terms of upgrading appliances, making repairs or retrofitting to save water.

The White Paper proposes a range of other demand side management measures to encourage water conservation by consumers and to return water to the environment.¹⁰⁰ For example, the Government will introduce mandatory water efficient plumbing measures (such as water efficient shower roses and taps) for all new houses and buildings and for all new fittings in existing buildings from 1 July 2004.¹⁰¹

Recommendation:

- **That there be increased access to rebate schemes for consumers who are not connected to the reticulated water supply.**

Consumer information on how to save water

In addition to retrofitting, it is vital that consumers are educated about the use of water efficient appliances, the reasons for and the effect of water restrictions, the use of alternative sources of water, such as the potential for safe use of grey water and other conservation measures.

The Code provides the provision of information in relation to water conservation to all consumers¹⁰² and many of the regional businesses have also embarked on water conservation education programs, through mail outs and website information, largely in response to the drought and to the implementation of water restrictions across the State.

⁹⁹ Yarra Valley Water, above n 96.

¹⁰⁰ DSE, above n 22 at 98-105.

¹⁰¹ DSE, above n 31 at 8.

¹⁰² Commission, above n 19, cl 12.5.

In addition, the Government implemented *Our Water Our Future*, a behavioural change campaign in metropolitan Melbourne and the White Paper states that it will replicate this campaign in regional and rural Victoria.¹⁰³

The White Paper also commits the Government to developing, in partnership with the Commonwealth and other State and Territory Governments, a national mandatory system for water efficiency labelling of appliances, fixtures and fittings.¹⁰⁴ The Victorian Parliament has recently passed the *Water Efficiency Labelling and Standards Act 2005* (Vic) which implements the system, requiring the labelling of products using stars (similar to those used on the now familiar energy efficiency labels) to show the water efficiency of products.

Information provision, including information about available concessions and rebate programs, is vital and it is important to ensure that it is delivered in a form accessible to all consumers. It should be provided in all major languages spoken in the water businesses geographical area as well as being available to consumers who suffer from a disability.

Special needs of tenants

Some tenants may also be subjected to further price increases, depending on the level of their water usage. This is because tenants are not usually charged a fixed water or sewerage service charge and are only charged volumetric charges. Increasing the volumetric component of charges, while giving incentives to consumers to reduce their water use, may significantly impact on tenants' bills.

In particular, tenants who do not have the ability to retrofit their homes, including hot water systems and water pipes, or appliances such as toilets and showerheads to conserve water may be more likely to go over into the second or third "block". Tenants are not eligible for many concession schemes such as the Water Conservation Assistance Pilot Program to update inefficient appliances or plumbing.

Research shows that people living in rental properties (whether private or public) have an increased likelihood of difficulty in paying utility bills.¹⁰⁵ For public housing stock, it would make sense for the Government to set high efficiency standards which are implemented as soon as possible. Public housing tenants are in subsidised housing primarily because they have been assessed as low-income earners. It would therefore be poor public policy to allow these households to face unnecessary high utility costs due to poor housing standards.

With respect to private rental stock, there is currently no obligations that require rental properties to meet any kind of water efficiency standards, nor is there any sort of water efficiency rating system for rental properties. Tenants attempting to make a decision about which of available rental properties is the most affordable for them do not, therefore, have all the information necessary to allow them to make an informed decision. The law regulating rental agreements could stipulate that a residential lease provide information about the likely costs of running appliances installed, or that minimum water efficiency standards be implemented for all rental stock. This would ensure that all low-income households in the private housing market have access to minimum acceptable quality housing.

Recommendations:

- **That the *Residential Tenancies Act 1997* (Vic) be amended to introduce water efficiency audits and to provide incentives to landlords to improve the water efficiency of rental properties.**
- **That the Government engage a review of public housing to ensure that all public homes are fitted with water efficient appliances.**

¹⁰³ DSE, above n 22 at 100.

¹⁰⁴ DSE, above n 22 at 101.

¹⁰⁵ See, for example, CLCV and CUAC, above n 1.

Monitoring of Affordability

As noted above, a comprehensive summary of a variety of social measures to address the impacts of the reform of water resources management used in a range of OECD countries was discussed in the OECD Report. Interestingly, the following observation is made in that report:

“Evidence-based information about the results of these measures has proved to be very elusive. For example, little information has been forthcoming on the extent to which the measures were utilised (ie *measure take-up*) or on any resulting *water charge burden relief*. Nor is much data available on the costs of implementation and administration.”¹⁰⁶

Importantly, the Commission now requires all metropolitan, regional and rural water businesses to collect information regarding affordability.¹⁰⁷ The new regime includes an expanded set of indicators to measure affordability of water, including the level of restrictions and legal actions for non-payment, the length of time restrictions are left in place, the average debt for restrictions and legal actions pursued, the availability of flexible instalment plans and the number of applications and approvals for hardship grants.¹⁰⁸ Data on the number of customers restricted or subjected to legal action for non-payment will also be further disaggregated to show the numbers of customers on concessions.¹⁰⁹

The Commission noted in its July 2004 Decision Paper, *Performance Reporting Framework Metropolitan and Regional Businesses*, that there was a need for further research on affordability issues and stated that it will look into undertaking a research project in 2005-6. We would support such research being undertaken as a matter of priority in order to establish the extent of affordability problems and to monitor changes as prices increase. We would urge the Commission to ensure that any such research takes into account a consumer’s ability to pay, not just whether payments have been made – whether consumers ration their water to save money or whether they skimp on other essential items in order to afford their bills. In addition, it will be important to assess measure take-up and the effectiveness of various measures that have been implemented to relieve stress on low-income families. This is essential to making an assessment whether either tariff related measures or other measures, such as concessions or assistance with water saving, are effectively ensuring that low-income and vulnerable consumers are not disconnected or restricted because of a lack of capacity to pay alone.

Recommendation:

- **That the Commission should engage in further research to obtain better indications of affordability problems. This study should focus specifically on low-income and vulnerable consumers and consider the impact of price increases on essential water use in poorer or more vulnerable households.**

8. Conclusion

Reform of the regulatory framework for water in Victoria has been comprehensive. Some reforms, however, have the potential to disadvantage low-income and vulnerable consumers. Measures to address the affordability of water, including tariff structures, financial hardship policies, consumer protection standards, improved concessions, and water conservation for low-income and vulnerable consumers need to be further considered so that the human right of affordable access to essential water can be practically implemented.

¹⁰⁶ OECD, above n 6 at 54.

¹⁰⁷ Commission, above n 38.

¹⁰⁸ Commission, as above.

¹⁰⁹ Commission, as above at 10.

3. Protecting the environment's access to water.

Paul Sinclair*

1. Introduction

This chapter explores the significance of water for the environment, noting the implications of water scarcity for the health of natural resources. There is increasing competition between consumptive uses of water, which, together with other factors such as global warming, have further reduced water availability. In this context, this chapter analyses the current water allocation framework in Victoria, including the bulk water entitlement conversion process. We argue that the framework as it currently operates has been incapable of providing water for the environment, on the basis that current processes are primarily aimed at clarifying existing rights to water and that environmental water is limited to anything surplus to consumptive uses. We also argue that it is in the interests of consumers that water is allocated sustainably and the environment's access to water is protected.

2. Water's impact on the environment

Water is the key physical influence on the landforms, plants and animals that make up riverine ecosystems. The mosaic of channel and floodplain forms is determined by water flow and sediment transport and these, together with the distribution of water in time and space, create the diversity of habitats required to sustain aquatic life. Although other factors are also important, such as the interactions between organisms themselves, the amounts and timing of water flows largely determine how riverine ecosystems are structured and the way they work.¹

Water drives the biophysical processes of a river system. Biophysical elements and processes that determine the patterns of change in biota, material and energy within ecosystems are considered condition drivers because they "drive" the ecosystem to a different condition or state.² Condition drivers include geographical factors like climate, rainfall and topography soil types, and they can be socioeconomic factors like resource use and degradation patterns. Intensive land and water use by people has the greatest impact on ecosystem condition.³

Rivers need more than just water in their main channel. A river is made up of the river channel, floodplain, riparian land, channel features, flow regime, water quantity and quality.

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¹ W J Young (ed), *Rivers as Ecological Systems: The Murray-Darling Basin*, CSIRO Land and Water and the Murray-Darling Basin Commission, Canberra 2001 at 4-5.

² National Land and Water Resources Audit, *Australian Catchment, River and Estuary Assessment 2002*, Vol. 1, Land and Water Australia, Canberra 2002 at p 9.

³ As above.

The Aral Sea: An example of what happens when the environment is denied access to water

The Aral Sea in central Asia was once the world's fourth largest freshwater lake. Water from Amu and Syr Rivers that once replenished the Aral Sea was extracted by irrigators upstream. Today, the Aral Sea has shrunk in surface area by 40 per cent, the volume of water in it has been reduced by 60 per cent and salinity levels have tripled. Each year winds carry 40 million tons of toxic dust-salt mixture from the dry seabed and dump it on cropland. All 24 native fish species in the Aral Sea have disappeared, along with the 60,000 jobs that relied on the fishing industry. Low river flows have concentrated salts and toxic chemicals, making water supplies hazardous to drink.⁴

Flow regime

The river flow regime is the key driver of river health. Rivers in the Murray-Darling Basin that include those of northern Victoria are some of the most highly variable river systems on Earth – with times of great high and deep low flows being their normal condition. The biota that live in Australian rivers are well adapted to these cycles and the ecological integrity of some rivers depend upon flooding over the floodplain and periods when the river and floodplain dry-out.⁵

The floodplain

Floodplain water bodies include billabongs, lakes, wetlands, flood-runner and distributary channels. These water bodies are naturally connected to rivers during high flows and are critical parts of the river ecosystem. Floodplain water bodies can be highly productive when filled with water and provide an extensive and great variety of aquatic habitats — like reed beds for frogs, water birds, and macro-invertebrates. As water levels recede, organisms and materials such as nutrients released from organic matter are fed back into the river, replenishing food resources in the stream.⁶ Floodplain water bodies can be affected by changes to a river's flow. When, how much, and how often the river runs high and low can have an enormous impact on the health of floodplains.⁷

River functions

The exchange of materials between rivers and floodplains is essential for maintaining biodiversity and supporting river functions. The natural cycles of wetting and drying that are driven by the patterns of high and low river flows are vital for the breeding of organisms whose life cycles are cued by flood events and the release of nutrients.⁸

Riparian land

Riparian land is the land just near rivers that directly influences or is influenced by rivers. Vegetation, in the form of trees and shrubs, has a great influence on the condition of a river. Trees provide shade and their leaves and bark supply energy, nutrients and habitat to the river and floodplains. Healthy riparian land contributes to a healthy river by regulating in-stream primary production, trapping sediment, nutrients and other contaminants that could pollute the river, protecting riverbanks from erosion, and providing a food source and habitat for aquatic animals.

⁴ S Postal, *Last Oasis: Facing Water Scarcity*, W W Norton, New York 1997 at 61-2.

⁵ National Land and Water Resources Audit, above n 2 at 63.

⁶ As above.

⁷ As above.

⁸ As above.

3. The big picture: Growing water scarcity

Competition between water users and the environment will intensify as water becomes increasingly scarce in Victoria. Global warming has taken place over the last century and there is new and strong evidence that most of the warming over the last 50 years is attributable to human activities.⁹

Australia will probably experience more droughts in the future. Farmers will be increasingly vulnerable to more intense droughts stretching over years. Increased evaporation and possible decreases in rainfall in many areas will adversely affect water supply, agriculture and the survival of key species.¹⁰ More regular and longer droughts, coupled with failure to redress over-allocated river systems and provide environmental flows, will have major implications for the survival of aquatic biodiversity. The risk of species extinction will subsequently increase.

Case study: Species extinction

The Murray Cod is Australia's great iconic native fish. Like many other species around the globe, Murray Cod populations have declined so severely that they have been listed as being vulnerable to extinction. On a global scale, about 20 per cent of the 9,000 known freshwater species are either extinct or threatened with extinction. In North America and Europe about 40 per cent of all native fish species are extinct or imperilled. In East Africa's heavily stressed Lake Victoria, 40 per cent of its unique 350 species of native fish are at risk, with 60 per cent already having been pushed into extinction.¹¹ China has 50,000 kilometres of major rivers. According to the United Nations Food and Agriculture Organisation, 80 per cent of these rivers no longer support fish.¹²

Global warming has already reduced the availability of water in Australia. Since the 1970s, Perth has experienced a 10-20 per cent decline in rainfall, resulting in a 40-50 per cent decline in the volume of water flowing into the city's dams. The Commonwealth Government believes it is possible that similarly dramatic declines in rainfall and run-off could occur in parts of southern Australia.¹³

Global warming is only one of a number of factors that will reduce the environment's access to water. Impacts such as bushfires, reforestation and growth in groundwater use have been recently assessed by the Murray Darling Basin Commission (the **MDBC**), which concluded that the flow of the Murray River could be reduced by 2,140 billion litres by 2023. Currently, about 75 per cent of the Murray's flow is extracted by irrigation and urban use. If flows were reduced by a further 10 per cent by 2023 this would leave the river with 15 per cent of its natural flow, or 4 per cent using 2053 projections.

Victoria's big drinkers

Irrigation industries account for about 80 per cent of Victoria's total water use. Approximately 85 per cent of irrigation water is used to grow meat and dairy products. In northern Victoria, where many of the State's most stressed rivers are found, the dairy industry accounts for over 50 per cent of all water used.¹⁴

⁹ B Pittock (ed), *Climate Change: An Australian Guide to the Science and Potential Impacts*, Australian Greenhouse Office, Canberra 2003 at 5.

¹⁰ As above at 102.

¹¹ J Abromovitz, *Imperiled Waters, Impoverished Future: The Decline of Freshwater Ecosystems*, Worldwatch Paper No. 128, Worldwatch Institute 1996, available at <http://www.worldwatch.org/pubs/paper/128/>.

¹² E O Wilson, *The Future of Life*, Vintage Books, New York 2002 at p 38.

¹³ Pittock, above n 9 at 91.

¹⁴ Environment and Natural Resources Committee, *Inquiry into the Allocation of Water Resources*, November 2001, Parliament of Victoria, Melbourne 2001 at 48.

Table 1: Water consumed by industry

Total water used in Victoria (billion litres) ¹⁵	
Total water consumed	5,788
Total water used by irrigation	4,019
Water used in Victoria by industry 2000-01	
Dairy Farming	1,685
Vegetables	131
Fruit	209
Rice	26
Manufacturing	248

4. Is the environment's access to water protected?

Many of Victoria's major river systems have so much water taken from them that they are already considered seriously "stressed" by the Victorian Government. The table below shows that:

- using the Government's own benchmark, many of Victoria's major river systems have unsustainable volumes of water taken from them;
- water use in major Victorian river systems increased substantially following the 1983 drought; and
- the *Water Act 1989* (Vic) (the **Water Act**) and the Victorian Water Allocation Framework has not protected the environment's access to sufficient water to maintain healthy river systems, nor has it protected Victorian river systems from increasing levels of water extraction.

Table 2: Percentage of increased water use compared to percentage of water currently extracted from Victoria's stressed and "at risk" rivers.¹⁶

River System	Increase in water use between 1983-97 (%) ¹⁷	Current flow extracted as % of natural flow ¹⁸
Tributaries that supply water to the Murray River		
Goulburn	84	63
Broken	90	27
Campaspe	124	47
Loddon	46	33
Wimmera (not a tributary of the Murray, but part of the Murray Darling Basin)	191 (includes the Avon River)	57
Ovens	103	99
Rivers that supply Melbourne, the Macalister Irrigation District and Gippsland Lakes		
LaTrobe	141	18
Thomson/Macalister	62 (Thomson only)	41

¹⁵ Australian Bureau of Statistics, *Water Account Australia 2000-1*, Commonwealth of Australia, Canberra 2004 at 21.

¹⁶ Rivers with more than 30 per cent of natural flows extracted are likely to be in a stressed condition: Department of Sustainability and Environment (DSE), *Securing Our Water Future: Green Paper for Discussion*, Melbourne 2003 at 21.

¹⁷ Australian Natural Water Resources Atlas, *Victoria*, available at http://audit.ea.gov.au/ANRA/water/water_frame.cfm?region_code=VIC.

¹⁸ DSE, above n 16.

Snowy	-99	40
Yarra	4099	35
Rivers in Victoria's South West		
Moorabool	953	50
Werribee	246	23
Barwon	182	16
Glenelg	19	90

As this table makes clear, agricultural demand for water will continue to grow at the expense of the environment and downstream communities unless Governments impose effective constraints. create incentives that promote the efficient use of water in agriculture and recover water for use by the environment.

Water use in Australia has been increasing — not decreasing. Between 1985 and 1996-97, total annual water use in Australia increased by 65 per cent. The annual volume of water used for irrigation has increased by 75 per cent while urban and industrial use has increased by 55 per cent during the years 1985-97.¹⁹

Reduction in return flows from irrigation systems

In 1993-94, a cap was imposed on water use within the Murray Darling Basin to put a limit on the exploitation of the Basin's river systems. The cap was not set at a sustainable level of water extraction, but at 1993-4 levels of water use. Since the cap was introduced there have been improvements in the water efficiency of many irrigation systems that have reduced the volume of polluted water returning from farms to the Murray system through irrigation drains. However, in the absence of a whole of system environmental flow regime, polluted irrigation water provides important flows. Benefits of reducing water wastage in the Murray Daring Basin have not improved flows in the river system. Rather, they have reduced the volume of water available to the environment.

Improved watering systems and recycling systems, better management of distribution systems to reduce channel seepage and increased diversions from drains have reduced drainage flows. The MDBC has also estimated that Murray River drainage flows, not included in the definition of the cap, have reduced by over 90 billion litres a year since 1993-94. This is equivalent to 2 per cent of the combined cap for the Murray River. It has been estimated that, across the Basin, return flows are likely to be halved by 2023 and halved again by 2053.²⁰

5. The Victorian water allocation framework

The Victorian Government's White Paper on water (the **White Paper**) is clear in its intent to address the legacies of unsustainable water use and establish a new foundation for water management in Victoria. The White Paper states that:

¹⁹ B Neal, P Erlanger, R Evans, A Kollmorgen, J Ball, M Shirley, and L Donnelley, *Australia State of the Environment Report: Inland Waters*, Commonwealth of Australia, Canberra 2001 at 19.

²⁰ Since 1989 water use in the Murray Darling Basin has been increasing, despite the imposition of a cap on water use established in 1993-94. Since the Murray Darling Basin cap was introduced in 1994 water use has increased and the amount of water returning to rivers from irrigation drainage has been reduced. Drainage from NSW back into the Murray River system has been reduced by a step-change of 26,500 ML/year post 1993-94. The drainage from Victoria is reducing by 9,700 ML/year since 1990-91. This corresponds to a total reduction of 67,900 ML/year since 1993-94. See A Prasad, and A Close, *Analysis of Irrigation Returns from Irrigation Districts in New South Wales and Victoria*, Technical Report 2002/3, Murray Darling Basin Commission, 2002 at 11.

“Our traditional approach to managing water has been to exploit rivers and aquifers, create dams to supply towns, industry and irrigation, and then dispose of the waste water back into rivers or the ocean. This is not sustainable.”²¹

The White Paper outlines five fundamental principles for the management of water in Victoria:

1. the management of water will be based on an understanding that a healthy economy and society is dependent on a healthy environment;
2. the Government will maintain overall stewardship of all water resources irrespective of source, on behalf of all Victorians;
3. water authorities will be retained in public ownership;
4. users of the services of water systems should, wherever practical, pay the full cost, including infrastructure, delivery and environmental costs associated with that service; and
5. the water sector, charged with managing our water systems, will be capable, innovative and accountable to the Victorian community.²²

The challenge is for these principles to be maintained throughout the implementation of legislative, institutional and water pricing initiatives.

Current legislative framework

The White Paper outlines the foundations for sustainable water and river management and has provided a revenue stream that can provide the resources needed to deliver healthy rivers and a sustainable irrigation industry. However, unsustainable water management has been supported by weak legislative protection for aquatic ecosystems and an administrative culture that has lacked public accountability. In our view, this historical legacy could weaken or subvert the successful implementation of the White Paper. Substantial legislative reform is required to address these issues, and to provide a strong regulatory framework to govern the operation of emerging water markets.

Successive Victorian Governments have worked to deepen water markets by strengthening irrigators' rights with respect to water at the expense of the environment. Victoria's development of water markets has been taking place since the introduction of the Water Act in 1989. Under the Water Act, Bulk Water Entitlements (BWEs) were established to facilitate the creation of water markets. BWEs are owned by corporatised water wholesalers, such as irrigation supply authorities, and the intention was for them to assist in developing market-based solutions to the economic and environmental problems faced by Victoria's water industry.²³ In the early 1990s, Government literature claimed that BWEs would protect and enhance the environmental qualities of waterways and their in-stream use. By 1995 the environmental benefits of BWEs was being downplayed, and the focus shifted to strengthening irrigators' entitlements under law, while largely ignoring environmental issues.²⁴

We consider that the Water Act currently fails to define the rights of the environment to water, yet provides detailed definitions of private rights. Private rights receive the highest level of protection, while the environment's rights are vague and assumed to be protected by the Crown and water authorities' right to water.²⁵ With the exception of Victoria and the Northern Territory, Australian legislation provides that the environment should always receive an allocation necessary to sustain the riverine and aquatic ecosystem.²⁶

The evolution of the Victorian water market has occurred in the context of weak legislative and policy protection of the environment's access to water. The Water Act has a long list of purposes at its beginning. Those that specifically relate to the environment are:

²¹ DSE, *Securing Our Water Future Together*, June 2004 at 10.

²² As above at 12.

²³ B Finlayson, and T Ladson, *The Management of Environmental Flows in Victoria*, Unpublished Paper, at 2.

²⁴ As above at 3.

²⁵ P L Tan, “Irrigators comes first: Conversion of existing allocations of Bulk Entitlements in the Goulburn and Murray Catchments”, *Environmental and Planning Law Journal*, Vol. 18, No. 2, April 2001 at 11.

²⁶ Environmental and Resources Committee, above n 14 at 182.

- ensuring water resources are *conserved* and properly managed for the *sustainable use* for the benefit of present and future *Victorians*: section 1(d);
- providing *formal means* for protecting and enhancing environmental qualities of waterways and their in-stream uses: section 1(j); and
- providing protection of catchment conditions: section 1(k).

Evidently, the Water Act is equivocal about supplying water to the environment. The words “conserve” and “sustainable use” in section 1(d) are not defined, so the ordinary meanings of the words apply. The word conservation refers to use with care, without wastage. In the context of water resources the concept of conservation largely means the storing of water for human use. Accordingly, “sustainable use” for the benefit of present and future Victorians described in section 1(d) does not refer to the protection of ecosystems but to the rights of future Victorians to use rivers for their benefit.²⁷

Bulk water entitlement conversion process

Eighty three per cent of Victoria's surface water is now controlled by BWEs.²⁸ A BWE is a property right to water held by water and other authorities and defines the amount of water that an authority is entitled to take from a river or storage.

In 2002 the Victorian River Health Strategy reported that:

“whilst a BWE conversion process is primarily aimed at clarifying the rights of existing users, in 82 per cent of these negotiations some improvements to environmental flow regimes have been achieved.”²⁹

There is no publicly available data that allows any assessment of how many of the 82 per cent of bulk entitlements quoted in the River Health Strategy actually met the ecological needs of river systems.³⁰

In 1999, the National Competition Council's assessment of Victoria's water reforms, based on figures provided by the Department of Natural Resources and Environment (now the Department of Sustainability and Environment (DSE)), showed that flow levels remained inadequate in 42 of the 73 systems where bulk entitlement conversion had occurred.³¹ Of the 31 systems deemed to have “adequate” environmental flows, 27 already had these flows in place before the bulk entitlement conversion process commenced — which leaves 4 river systems from a total of 73 that achieved an improved environmental flow regime under the bulk entitlement process. This means that only 5.5 per cent of bulk entitlements had “adequate” environmental flows.

The Water Act makes only slight and transient reference to the needs of the environment in this process and it is clear that the primary purpose of BWEs is to secure entitlement to water in a commercial sense. In fact, it has been publicly stated by departmental officers that the primary purpose of the BWE program was to convert poorly defined existing rights to water into rights that can be legally enforced and traded; and that environmental outcomes are only achieved *if possible*.³²

An authority granted a BWE may sell the water by auction, by tender, or “in any other way it thinks fit”. The point at which environmental matters are considered in this process is firstly through the requirement that the applicant for a BWE must participate in an investigation to assess the likely effects of granting the

²⁷ Tan, above n 25 at 11.

²⁸ Victorian Catchment Management Council, *The Health of Our Catchments: A Victorian Report Card*, State of Victoria 2002 at 56.

²⁹ State of Victoria, *Victorian River Health Strategy*, Department of Natural Resources and Environment 2002 at 61.

³⁰ The Victorian River Health Strategy states that a key component of an environmental flow regime is to “maintain the ecological assets of a river, including those linked with floodplains and downstream estuaries an/or terminal lakes, and maintain the river in ecologically healthy condition”: as above at 67.

³¹ National Competition Council, *Second Tranche Assessment of Governments' Progress with Implementing Policy and Related Reforms*, Commonwealth of Australia 1999 at 404.

³² Finlayson and Ladson, above n 23 at 2.

entitlement they seek. This is a vague requirement that does not specifically mention the environment. In granting an entitlement, the Minister for Water may attach certain requirements, including protection of the waterway and the riverine and riparian environment. Again, this is an optional requirement of the Water Act and in the BWEs thus far granted, only in some cases have conditions been attached in relation to the environment.³³

Another stated objective of the BWE process was to allow specific entitlements for environmental purposes, although this has apparently achieved little support within the government bureaucracy. For example, the Department of Natural Resources and Environment, in their submission to a parliamentary inquiry into water allocation, questioned the value of BWEs for the environment.³⁴ This was despite the fact that legally recognised environmental water entitlements are one of the nationally agreed principles for environmental flows.

To date, one environmental BWE has been granted, which allows for delivery of water to wetlands of the Kerang Lakes and nearby areas along the Murray River. However, in this case there is a big difference between having the entitlement and getting the water. The problem is that this water has to be provided through irrigation channels that are managed by Goulburn-Murray Water who charge a fee for delivery. Money is raised to pay for these delivery charges by selling the environmental allocation to irrigators. It is appropriate to legally recognise environmental flows to ensure there is protection against over-exploitation of rivers. However, selling off environmental flows to pay delivery charges seems extraordinary and highlights the lack of legal protection for the environment that is provided by the Water Act.³⁵

One of the main stated objects of the BWE process in Victoria is to secure water for existing users and for making water entitlements sufficiently secure to enable water to be traded commercially. In the view of Finlayson and Ladson, the Water Act is weak in the way it provides for environmental needs and that weakness has been revealed in the way BWEs have been allocated and the low level of protection they have provided for the environment.³⁶

Bulk entitlement project groups, streamflow management planning project groups and groundwater management planning groups are dominated by private water users and water authorities who have a direct financial interest in maintaining the water-allocation regimes that are degrading river systems. It is in the financial interest of water authorities to diminish any potential water allocation designed to protect and restore aquatic ecosystems.³⁷

In 1991 the Victorian Government prepared a document entitled *Water Victoria: The Next 100 Years* in which it described how:

“the primary role of the Government ...will be to protect the natural environment of our water resources. Steamflows for fish and other riverine flora and fauna, together with the natural flow characteristics of aquifers, require special attention by Government. Special Government legislation and regulation will be needed to protect common property and environmental values of water resources from the excesses of free market behaviour.”³⁸

³³ As above.

³⁴ Environmental Resources Committee, above n 14 at 186.

³⁵ Finlayson and Ladson, above n 23 at 2.

³⁶ As above.

³⁷ The Parliamentary Inquiry into the Allocation of Water Resources observed that it is a statutory requirement in farming districts for a majority of the Groundwater Management Plan Consultative Committee's to be farmers, and that the Victorian Farmers Federation advise the Minister on which farmers will be nominated. The Inquiry found that a consequence of the imbalance in the GMP project group membership is that: “There certainly is potential for the interests of consumptive users, particularly irrigation, to be given priority over other consumptive and non-consumptive users. The potential for bias could undermine the legitimacy of the process and broad acceptance of the outcomes”: above n 14 at 196.

³⁸ Department of Conservation and Environment, *Water Victoria: The Next 100 years*, State of Victoria, Melbourne at 161.

The environment is still waiting to be granted the protection promised over a decade ago.

Recommendation:

- **That robust legislative and institutional reform is required to protect the environment's access to water.**

Development of water markets

In northern Victoria, water markets are currently redistributing water amongst existing consumptive water users. Water markets will only provide benefits to the environment if they increase water productivity and create water savings that are returned to river systems as environmental flows. Water markets must be developed in parallel with programs that recover water for over-allocated river systems, and legislative reforms that deliver strengthened legal protection for environmental water allocations.

There is a broad consensus that water markets can provide significant benefits to society by reallocating water from low value inefficient uses, to higher value efficient water uses. However, water markets have, to date, not returned water to over-allocated and stressed river systems, and have provided few documented environmental benefits. The Victorian Government publication *The Value of Water: A Guide to Water Trading in Victoria* claims that the "water market alleviates stress on the environment" by:

- maximising the value of water already taken out of streams;
- providing scope for the most productive water users to expand and new water users to enter the market without requiring new dams to be built; and
- relocating the extraction of water from environmentally sensitive areas.³⁹

The only evidence of environmental benefits provided by *The Value of Water* is of irrigation water being traded out of the highly saline area of Tragowel Plains. It is noted that this trade will not reduce salinity inputs into the Murray River in the short-term.⁴⁰

Further, farmers' and regional communities' confidence that water trading brings about societal benefits may be impeded by inefficient and ineffective application of the laws. Research conducted as part of an Australian Research Council grant in 2004 shows that only 20 per cent of farmers interviewed think that water-trading policies are fair.⁴¹ While the results of the research also indicate that the water trading law reforms in Victoria have made some inroads in achieving fairer water allocation and better dam safety, more work is needed to encourage farmers (and rural and regional communities in general) to more fully participate in water allocation planning processes. All stakeholders, including consumers and regional and rural communities, need to participate in the development of efficient and productive water markets so that water savings can be returned to the environment.

Recommendation:

- **That water markets should operate to increase productivity and efficiency so as to develop water savings which can be returned to the environment.**

³⁹ Department of Natural Resources and Environment, *The Value of Water: A Guide to Water Trading in Victoria*, State of Victoria, Melbourne 2001 at 21.

⁴⁰ As above.

⁴¹ Jennifer McKay and John Pisaniello, *Victorian Dams New Regulation Customer Survey*, Working paper number 3 of Water Policy and Law Group, University of South Australia, 2004. The survey was part of an Australian Research Council Grant and was conducted in April 2004. A total of 77 farmers owning a total of 140 farm dams were surveyed in Victoria. The grape growing industry was selected because of its tendency to require the more larger-sized, significant type farm dams.

6. Competing for Victoria's scarce water

Protecting the environment's access to water will become increasingly difficult unless Governments act to enshrine the environment's right to water in law. The MDBC has recently estimated that there will be dramatic reductions to the water inflows of the Murray systems over the coming decades, caused by a number of inter-related factors.

Key Process	Most Likely Change in System Inflows by 2023	Most Likely Change in System Inflows by 2053
Climate Change (%)	-5%	-15%
Climate Change (GL/year)	-1,100	-3,300
Reafforestation (GL/year)	-330	-600
Growth in Groundwater Use (GL/year)	-510	-510
Construction of Farm Dams (GL/year)	-250	-400
TOTAL IMPACT (GL/year)¹	-2,140	-4,650
TOTAL IMPACT % - Most Likely	-10%	-21%
Upper range of uncertainty (%)	-30%	-62%
Lower range of uncertainty (%)	+5%	+11%
Impact of 2002-03 bushfires (GL/year) ²	-430	-40

¹ Impacts of reafforestation, groundwater and farm dams have been factored down by the climate change reduction before totalling to avoid double counting.

² The impact of bushfires has been omitted from the total because its impact is incorporated in the historical record used by model.

As water becomes increasingly scarce, the price of water will rise to reflect this scarcity. This is likely to make it more difficult for Governments to buy water back from irrigators because the costs will be high.

The increasing scarcity of water will also intensify competition between consumptive water users. In rapidly urbanising areas that are short on water, competition between farms and cities for water is already heating up. In western United States, cities are already buying farmers' water, water rights, or land that comes with water rights in parts of Arizona, California and Colorado. In addition to the trading of water between cities and farmers, the Imperial Irrigation District in southern California reached a deal with the city of San Diego in 1989 that led to the city investing money in irrigation efficiency in return for the water saved by these improvements.⁴²

Returning water to the Murray River

A recent report prepared by the National Program for Sustainable Irrigation found that if irrigators improved their water efficiency by 1.3 per cent then 1,440 billion litres of water could be recovered for environmental flows to the Murray River System without any detrimental impact on the agricultural economy. This is the volume of water scientific assessments have found needs to be returned to the Murray to give the river a "moderate" chance of health.⁴³

Pressure on agriculture will grow from other economic interests seeking water for development. In the United States, one cubic million litres of water in Southern California can produce 13,000 jobs in high technology industries, while the same amount of water used to grow grass for livestock creates only six

⁴² S Postal, *Pillar of Sand: Cant the Irrigation Miracle Last?*, WW Norton, New York, 1999 at 116.

⁴³ National Program for Sustainable Irrigation, *Implications of Water Reforms for the National Economy*, Centre for International Economics, Canberra, July 2004 at xvi.

jobs.⁴⁴ It has also been estimated that in the mid-1980s enough water to meet the entire needs of Los Angeles with a population of 13 million people was being used in California to grow irrigated pasture for livestock. This pasture was worth \$100 million, while the economy of Southern California was worth \$300 billion.⁴⁵

In Victoria, while irrigation uses 70 per cent of all water consumed, it generates wealth that accounts for 2.7 per cent of the Gross State Product.⁴⁶ A comparison of the average financial return from every megalitre used shows that manufacturing returns \$86,800, services \$765,200, and agriculture \$700.⁴⁷ The relatively low contribution agriculture makes to the Australian economy suggests that non-agricultural industries that make more money from water will buy more of it from irrigators.

The National Land and Water Audit, which has forecast estimates of surface water use in Victoria for 2050, suggests that the industrial/commercial sector will increase to 11 per cent at the expense of irrigators, which will decline to a 73 per cent share. The proportion of water consumed by the urban domestic sector is likely to remain relatively constant at about 17 per cent. This shift in water use from irrigation to the industrial/commercial sector results from the assumption that the industrial/commercial sector is given priority supply over irrigators which, in turn, reflects the greater willingness of the industrial/commercial sector to pay a higher price for water.⁴⁸

The environment's poorly protected access to water may be further restricted in future years as competition between agriculture, forestry, mining and urban water supply intensifies, and global warming reduces water availability.

⁴⁴ P Gleik, "The Changing Water Paradigm", *The Worlds Water 1998-99*, Island Press, Washington 1998 at 25.

⁴⁵ As above.

⁴⁶ Environment and Resources Committee, above n 14 at 228.

⁴⁷ As above.

⁴⁸ Australian Natural Resources Atlas, *Surface and Groundwater Management, Availability, Allocation and Efficiency of Use: State of Victoria Water Resources Overview*, available at http://audit.ea.gov.au/ANRA/water/docs/state_overview/VIC_ovpage.html - gw_cat.

4. Creating an integrated statutory planning framework for water.

Paul Sinclair

1. Introduction

The previous chapter identified significant weaknesses in Victoria's water allocation framework which has led to the sustained exploitation of the environment's access to water. This chapter draws on that analysis to argue that Victoria requires a new integrated statutory planning framework for water that guarantees access to water for the environment. The Victorian Government's White Paper on water (the **White Paper**) foreshadows such protection through the implementation of regional sustainable water strategies, the introduction of an environmental water reserve, and improved pricing of agricultural irrigation. Such mechanisms, if implemented in an integrated, responsible fashion, can contribute to improved river health, thereby promoting social and community health. In our view, protection of consumers' access to, and affordability of, water requires ongoing support in the form of sustainable water management and environmental health.

While this chapter identifies some of the main challenges that need to be overcome to ensure proposals in the White Paper are effectively implemented, the report attached in Appendix A provides further analysis and more detailed legislative recommendations. This paper, written by Phillips Fox Lawyers on behalf of Environment Victoria, Environment Defenders Office, Australian Conservation Foundation and WWF, submits that the key to achieving sustainable water management is adoption of a holistic and integrated water planning framework supported by clear, focused legislative amendments. Although the paper does not represent the final position of the above organisations, it is hoped that it contributes to the creation of legislation that will play an important role in making a sustainable water industry a reality.

2. Water resource planning

Currently, the *Water Act 1989* (Vic) (the **Water Act**) requires the Minister for Water to carry out a continuous program of water resource assessment.¹ However, the Water Act only goes as far as requiring a report on the assessment program to be included in the Annual Report of the DSE. Consequently, the provision of comprehensive and publicly available knowledge about the State's water resources through the legislative framework of the Water Act has been incomplete and inadequate. The Water Act imposes no requirement for whole-of-state or regional planning, and current land and water strategic planning documents, such as the Victorian River Health Strategy and Regional Catchment Strategies, are conducted outside the framework of the Water Act.

The Government has committed to significant improvement in river, floodplain and estuary health (through application of the Victorian River Health Strategy and regional River Health Strategies) by 2010. This will require a significant increase in resources invested in water recovery and riparian and riverine rehabilitation. The White Paper indicates that \$100 million has been allocated over 4 years to implement the Victorian River Health Strategy.

The Water Act should be amended to incorporate improved integration of State and regional planning mechanisms. The White Paper's proposed reforms take steps to address the need for better planning and knowledge of water resources. In implementing the reforms, the Government should be mindful that a robust planning system for water must be adequately funded and resourced, based on coherent guiding principles, identified priorities and timeframes and integrated with other (land-use) planning frameworks.

¹ *Water Act 1989* (Vic), section 22.

We consider that a planning framework that integrates principles of ecologically sustainable development (**ESD**) into the planning process is the key to successful and sustainable management of our water resources. Currently, the Water Act, the *Water Industry Act 1994* (Vic) and the *Catchment & Land Protection Act 1994* (Vic) (the **CaLP Act**) do not incorporate or prioritise clear ESD principles. There is also no substantive duty on the Minister for Water to provide for the ecologically sustainable management and development of water resources when granting entitlements to water, or to rehabilitate and protect degraded aquatic ecosystems.

The legislation should be reformed to firmly entrench ESD principles and impose an obligation on all persons involved in the allocation and management of water resources to comply with these principles.² In the absence of such legislative commitment, the current approach under the Victorian River Health Strategy could be viewed as a loosely worded promise which provides no real security for aquatic ecosystems or wider environmental needs.

The planning framework must also identify priority uses of water, systems and sites for protection, restoration and rehabilitation, and timeframes against which progress will be measured. This is currently achieved through the *Heritage Rivers Act 1992* (Vic) (the **Heritage Rivers Act**), but this process will need to be better integrated into the land and water-planning framework.

It is acknowledged that in the White Paper, the Government has identified certain regulated systems and 21 unregulated rivers as systems for which immediate action will be taken to improve river health. However, these priorities for restoration must be set through a process that links back explicitly into the broader strategic planning mechanisms and processes, including timeframes set through other planning processes (such as through the Heritage Rivers Act, the *Planning & Environment Act 1987* (Vic) (the **P&E Act**) and the CaLP Act), and policy initiatives such as the Living Murray and the National Water Initiative³ processes.

Timeframes (regardless of how they are set in relation to individual systems) must be set through a statutory process with appropriate provision for monitoring and accountability.

Adequate funding

Adequate funding of research into identification and protection of significant river systems, wetlands, estuaries and groundwater dependent ecosystems is fundamental to the ability to plan appropriately for the ongoing protection, restoration and use of our water resources. The Government must provide sufficient, stable and ongoing funding to carry out this work.

State water inventory

The Government will carry out and publish a high-level State Water Inventory (the **Inventory**) of current water resources, including surface water, groundwater, recycled water and stormwater.⁴ It will examine the condition of, pressures on, and trends for those resources, and will (in part) draw upon pre-existing information sources. The Inventory will satisfy the Minister's obligation under section 22 of the Water Act to ensure that a continuous program of water resource assessment takes place, and will be updated every 5 years. The initial Inventory will be produced by early 2005, and will establish guidelines and terms of reference for the production of regional Sustainable Water Strategies.

The Inventory is a vital tool that will enable Victorians (both managing agencies and other interested bodies) to establish a credible benchmark against which change in the conditions of water resources and the progress of reforms can be measured. However, for the Inventory to provide an accurate picture of the current state

² P L Tan, *Legal Issues Relating to Water Use*, Issues Paper No 1, Institute for Rural Futures at 27.

³ For example, paragraph 41 of the Intergovernmental Agreement on the National Water Initiative notes that under existing NCP agreements, arrangements for addressing over-allocated and overused systems must be substantially completed by 2005, with substantial progress to be made in adjusting these systems by 2010.

⁴ Department of Sustainability and Environment (**DSE**), *Securing Our Water Future Together*, June 2004 at 26.

of our water resource systems, it will need to place the information that it collates in an appropriate context. This will require the incorporation of historical data, where it is available, including from sources such as the National Land & Water Audit, the Wild Rivers Database, the National Directory of Important Wetlands, and other relevant State and local inventories and databases.

The Inventory should be comprehensive (i.e. it should include rivers, wetlands, estuaries and groundwater); should specify the boundaries of systems (and their interconnections); and should contain information on the values of particular sites.

Five years is an inappropriate timeframe for conduct of the Inventory: in order to track emerging trends, a more frequent interval (such as an annual audit and report) is necessary.

Regional sustainable water strategies

On the basis of the information obtained through the Inventory process, the DSE will prepare five regional Sustainable Water Strategies (the **Strategies**). These will focus on particular problems (supply, quality) and opportunities (to improve health and security) for the region's resources, and may set priorities for infrastructure (especially for water recycling), reallocation and managing changing demand, and directions to enhance supply across Authority boundaries. The Strategies will also aim to raise regional community awareness of the long-term water situation and how members can act to improve it.

The Strategies will have broad planning horizons of 15 years and beyond, but where required may be revised or replaced at shorter intervals. The strategies will be developed through consultation with stakeholders (Catchment Management Authorities (CMAs), Water Authorities, local government, indigenous and other communities) in a process that will commence progressively over the next two years.

It is envisaged that the Strategies, prepared in 5 regions across Victoria, will satisfy the requirements under the National Water Initiative for regional planning mechanisms.

The White Paper gives responsibility for preparation of the Strategies to the DSE. However, to be enforceable, the responsibility for preparation of Strategies should be placed on the Minister (and delegated to the DSE), and to be effective, the Strategies will require broad-based expert and community input. The stated purpose of the Water Act, outlined in section 1(e), of maximising community involvement in the preparation process could be achieved by requiring consultation with experts from specified disciplines, and imposing notice requirements, allowing public submissions, and requiring consideration of those submissions in a manner similar to panels appointed in the event of contested applications to rezone land under the P&E Act.

The Strategies must be given legislative basis. The legislation should set out the matters that must be considered in preparing each Strategy (and reiterate the terms of reference and guidelines set by the Inventory). Once endorsed by the Minister, the Strategies should be tabled in Parliament, and made publicly available. Within a certain specified time, the Minister should be required to report to Parliament on progress made towards the achievement of targets set in the Strategies. The Strategies should be required to be replaced at least every 15 years (if not before, in accordance with specified triggers including river health, flow and extraction thresholds, and changes to inflow caused by global warming). A five-yearly review should be undertaken in order to assess the overall performance of the plan and provide feedback to the CMAs, water authorities, government, community and water users on the performance of the plan and identify any key trends and issues for the major review.

It is also necessary to ensure that conflicts of interest are avoided or balanced where possible. Current water allocation consultative committees are dominated by consumptive water users and have failed to provide environmental flow regimes to Victoria's river systems. This can be ensured by implementing an open and consultative process of strategy development that reflects all interests and does not allow a single interest group to dominate decision-making processes. Water consumers, too, need to be included in consultative

processes to ensure that social impacts for consumers from the implementation of the Strategies are considered.

The Strategies are an appropriate mechanism for identifying river and wetland systems with “(inter)national values” which would qualify for funding under the Council of Australian Government’s (CoAG’s) National Water Initiative.

Recommendations:

- **That the Water Act should be amended to include improved and robust integration of State and regional water planning mechanisms, including legislative implementation of the State Water Inventory and Sustainable Water Strategies, complemented by adequate funding to ensure practical implementation.**

3. Environmental water reserve

In Victoria to date, although some steps have been taken to provide water for the environment, there has been no effective system for managing and resourcing environmental flows.⁵ The White Paper acknowledges that one third of Victoria's rivers are in poor or very poor condition and proposes a number of measures to restore the health of rivers and aquifers. These include implementing the Victorian River Health Strategy, investing in water recovery, decommissioning Lake Mokoan, boosting resources to CMAs and introducing site-use licence requirements. However, the primary proposal intended to achieve environmental protection in river and groundwater systems is the establishment of the Environmental Water Reserve.

The Environmental Water Reserve refers to water allocated to maintain the environmental values of the surface and groundwater systems and other water services that depend on a healthy environment, sustain biodiversity, ecological functioning and water quality.

While in theory the establishment of the Environmental Water Reserve is a major step forward, its effectiveness in protecting the environment will depend on how it is implemented and managed over time, and the degree of legislative and practical protection it is afforded. Bulk Entitlement and Stream Flow Management Plan processes similarly promised environmental protection, but in practice have commonly been shown to lead to the entrenchment of interests of consumptive users over environmental needs, and the perpetuation of current degradation, while providing only limited opportunities for improved protection of environmental health.⁶ To date, the environment has generally received whatever water is left over after consumptive uses have been met. This situation is not satisfactory or sustainable.

The Environmental Water Reserve will be established in all rivers and groundwater systems, and will place limits on the water available for consumption which will be set through:

- application of Sustainable Diversion Limits or Permissible Annual Volumes;
- rules and conditions in consumptive Bulk Water Entitlements, licences and management plans; and/or
- specification of Environmental Bulk Entitlements to apply in regulated river systems.

The initial Environmental Water Reserve will consist of the water remaining in the system after the recognition of existing consumptive entitlements, and effectively operates through the current framework for water allocation employing tools already available to water managers under the Water Act. Sustainable Diversion Limits and Permissible Annual Volumes will be established and enforced under the Water Act,

⁵ Environment Victoria and Environment Defenders’ Office, *Clean Water, Healthy Rivers, Strong Communities - An Action Plan to Protect and Restore Victoria's rivers*, EV and EDO, Melbourne, June 2003 at 1.

⁶ See, for example, N Fraser, Natalie, *Are Stream Flow Management Plans protecting Victoria's stressed rivers?* September 2004; T Ladson and B Finlayson, B., “Rhetoric and Reality in the Allocation of Water to the Environment: A case study of the Goulburn River, Victoria”, *River Research and Applications*, Vol. 18, 2002; Tan, above n 2.

and there will be a moratorium on new diversions in all fully allocated river basins and aquifers until these caps are in place.

The Environmental Water Reserve will be held by the Minister for the Environment and will be managed on behalf of the Minister by the CMAs. Environmental water will be given appropriate statutory recognition, and have at least the same degree of security as consumptive entitlements. The legal status of the Environmental Water Reserve will be equivalent to water allocated for consumptive purposes, and the Sustainable Diversion Limit and Permissible Annual Volume will be established and enforced under the Water Act. There will be a moratorium on new diversions in all fully allocated river basins and aquifers until these caps are in place.

The major issue with respect to the Environmental Water Reserve is that the starting point for its establishment is generally set as the water remaining after current allocations have been satisfied.⁷ Labelling the water left in the system as “environmental water” creates the potentially misleading impression that environmental needs are being met, whereas the initial Environmental Water Reserve will merely perpetuate historical (over-)allocation. The implementation of an ecologically sustainable Reserve in over-allocated systems would seem, initially, impossible. Unless the legislative framework imposes a specific process to require the Environmental Water Reserve to be increased within specified timeframes to sustainable levels, the Reserve will afford little or no protection to the environment, regardless of its purported legal status as equivalent to consumptive entitlements.

Until the Environmental Water Reserve reaches sustainable levels in all systems, the primacy of environmental health, in accordance with the Government's stated first principle of water management, is not being respected. While the government has noted that “further action may be required” to achieve sustainable levels, and indicated that the creation of a satisfactory Environmental Water Reserve will depend on a number of measures (including reuse and recycling projects and purchase of water through the market), questions remain as to exactly what this further action will entail and when it will be carried out.

Need for integration into planning framework

For this reason, general integration with planning processes and specific timeframes and targets will be crucial to the successful implementation of the Environmental Water Reserve. As noted above, timeframes will be set through the Strategies and regional River Health Strategies, but (as this will result in policy revisions approximately every 15 years, and the qualification of rights every 15 years) it is arguable that these plans will not be sufficiently flexible (or revised often enough) to enable adaptive management of the Environmental Water Reserve. Stream Flow and Groundwater Management Plans will also need to provide appropriate targets for environmental health and triggers for review, so as to ensure compliance with the overarching Strategies.

Need for clear definition of environmental water

An Environmental Water Reserve is to be provided for all declared waterways and aquifers. The Environmental Water Reserve may be provided through a number of different mechanisms; for this reason, an overview of how the Reserve will be provided in each system will be required. Broadly, legislation must impose a requirement to provide water for the environment in accordance with the National Principles for the Provision of Water for Ecosystems: this means that elements of the flow regime must be linked to the objectives of ecological and ecosystem management.⁸

⁷ In this way, the Environmental Water Reserve is no different to historical practice. See The Wentworth Group of Concerned Scientists, *Blueprint for a National Water Plan*, WWF, Sydney 2003 at 7.

⁸ Sustainable Land and Water Resources Management Committee Subcommittee on Water Resources, *National Principles for the Provision of Water for Ecosystems*, ARMCANZ and ANZECC Occasional Paper SWR No 3, July 1996.

The component elements of the Environmental Water Reserve must be clearly identified and defined in legislation. Ideally, this definition would acknowledge the environment's prior right to water to sustain ecosystems. Given the variability of conditions between and within systems, consideration must be given to the provision or specification of environmental flows through a number of different mechanisms, including volumetric and capacity share of the resource and storages (depending on the relevant circumstances). It will also be necessary to consider how to provide for less frequent environmental water (such as floodplain flows one in every ten years).

Particularly within regulated systems, there is a strong argument that the Environmental Water Reserve should be provided as a capacity share of the total available resource (or in certain circumstances, of inflows) because this prevents the environment's share of the resource being eroded by decrease in overall volume of available resource. As experience with the Murray River has shown, provision of water for the environment in this form has allowed the environmental manager the greatest flexibility to meet ecosystem needs. In order to be able to provide this, adequate data tracking of inflows in storage (such as an annual framework for calculated inflows into the system) is required. It is also necessary to provide the environment with a share of the channel capacity within delivery systems (so that the environmental manager can release water when they want — otherwise they cannot provide true adaptive management).

Recommendations:

- **That the Environmental Water Reserve be implemented through robust legislative and practical protection, recognizing the environment's prior right to water.**

4. Pricing irrigation water

“The key to sustaining economic progress is getting prices to tell the ecological truth”.⁹

The price for irrigation water is determined by the cost of supply to irrigation water users. The water itself is free of charge. The price paid for irrigation water differs between regions.

The Price per Megalitre of Irrigation Water (2003-04 Prices)	
Shepparton Irrigation District	\$35
Pyramid-Boort Irrigation District	\$24
Murray Valley	\$23
Torrumbarry	\$26

One of the most significant reforms detailed in the White Paper is the recovery of funds from urban water users based on the volume of water used that is reinvested into river protection projects (see Chapter 2 for discussion regarding the environmental contribution included in domestic consumers' water bills). The importance of this initiative is that it will raise money from end-use consumers to fund river protection, and it establishes a financial obligation on consumers to account for the environmental damage caused by extracting water from river systems. This principle needs to be extended to irrigation water users.

Since the nineteenth-century, Government policy towards rivers has focused on how best to extract, store and deliver water for the benefit of irrigated agriculture. During the 1880s, Alfred Deakin, the father of Victorian irrigation, wrote that:

“if Victoria is to progress in the settlement of her people upon lands and the multiplication of her resources by the conquest of areas hitherto regarded as worthless ... it must be by means of irrigation. No price, it may be said, is too high for such a promise of progress.”¹⁰

Successive Victorian Governments have made Deakin's dream a reality — rarely have the environmental costs of degradation inhibited the exploitation of the State's rivers.

⁹ L Brown, *Eco-Economy: Building an Economy for the Earth*, Earthscan, London 2001 at 233-4.

¹⁰ As above at 233-4. Alfred Deakin quoted in J M Powell, *Watering the Garden State: Water Land and Community in Victoria, 1834-1988*, Allen and Unwin, Sydney 1989 at 108-9.

Industries such as dairy have been built on the back of Alfred Deakin's vision. If it is true that the key to sustaining economic progress is getting prices to tell the ecological truth, then recovering the real costs of water use will have substantial impacts on these industries that have avoided these costs in the past.¹¹

Case study: The Victorian Dairy Industry

The dairy industry is the highest water using industry in Victoria and accounts for 1,685 billion litres of water each year. Dairy producers are vulnerable to increases in water prices that reflect the ecological costs of extraction because the price they receive for the bulk of their milk is determined by the global commodity market. Farmers are receiving lower prices for their products while their costs of production continue to increase. This has placed enormous pressure on farmers to increase their productivity by applying new technologies that will make production more efficient while not necessarily accounting for environmental damage caused by the increasing stress being placed on land and water. Farmers increase their productivity by using more inputs such as water, fertilizers and pesticides – all of which have adverse environmental consequences.¹² The Australian Bureau of Resource Economics has calculated that the average annual costs of running a dairy farm come to \$474,797. Water charges account for \$5,955 of these total costs.¹³

It has been widely documented that the general trend in agricultural commodity prices has been downward for decades. In the 1950s the ratio of the costs of production relative to the prices received by farmers for their output was four times higher than it is today.¹⁴ The net income per farm in Australia has fallen steadily over the last 40 years and is now only about 60 per cent of the level it was in the 1950s.¹⁵

Victorian dairy farmers are price takers, not price setters, and will always be vulnerable to the uncertainties of global commodity prices set by the importers of milk products. Milk prices can change quickly and dramatically; for example, in the financial year 2002 to 2003 the price paid to dairy farmers for milk dropped by 25 per cent.¹⁶ Victoria exports almost 80 per cent of its milk in processed form, and Australia is the third largest milk exporter in the world. Australia generates about \$3 billion from the export of processed dairy products. Less than 8 per cent of milk produced in Victoria is sold through supermarkets and corner shops.¹⁷

Pricing irrigation water for conservation and improved productivity

Research into global water market and pricing policies carried out by the OECD has found that water pricing can perform two functions. The first is to ensure that the service costs of supply water are completely borne by the users, allowing water agencies to focus on actions and policies that reduce hydrological risks and restore the environmental health of river systems. Second, water prices that reflect the real environmental, social and economic costs of water extraction, distribution and management promotes water use efficiency. This in turn narrows the gap between the private and social benefits that are produced by irrigation. For example, an irrigator who pays \$30 to a publicly owned water company for one megalitre of water can then

¹¹ As above at 233-4.

¹² Monash Environment Institute of Monash University, *Land and Water Management Environmental Scanning: A Report Prepared for Catchment and Water Division*, Department of Natural Resources and Environment, 2002 at 20.

¹³ ABARE, *Agsurf*, available at <http://agsurf.abareconomics.com/>.

¹⁴ Monash Environment Institute, above n 12 at 20.

¹⁵ As above.

¹⁶ O Gyles and P Doyle, *Future Dairy Farming Systems in Irrigated Regions (Phase 2)*, Department of Primary Industries and DRDC, October 2002.

¹⁷ Food Victoria, *Victorian Dairy Industry*, available at www.food.vic.gov.au.

sell the same volume of water for a private gain of over \$1,000.¹⁸ The OECD also notes that there are few examples of countries in which water pricing policies have successfully delivered benefits related to both functions.

Keeping the cost of water artificially low does not encourage irrigators to be accountable for their water use or generate sufficient funds to maintain water infrastructure. The low cost of water distorts irrigators' selection of crops and acts as a disincentive for investment in more efficient irrigation technology. The OECD noted in 2002 that the water pricing policies in Spain, the United States, Australia, Mexico and Canada were all acting as disincentives for irrigators to invest in water saving efficiencies and reduce their environmental impacts.¹⁹

Irrigation inflicts social costs on third parties and the environment. In both cases, social costs originate from irrigators' use of valuable resources or from their pollution of the environment and other agriculturally productive systems. Irrigation can affect the environment through:

- direct impact on water resources;
- direct impacts upon soils;
- direct impacts on biodiversity and landscapes; and
- secondary impacts arising from the intensification of agricultural production through the conversion of rain fed land into irrigated acreage.²⁰

Recent international assessments of irrigation's social costs include the following conclusions:

- water pollution. Groundwater contaminated by nitrates is widespread across OECD countries. In many cases over-fertilisation of irrigated land is thought to be responsible;
- over-exploitation of water resources. The list of regions and basins where problems are related to excessive irrigation would be very long. The most severe problems have occurred in drought years, particularly in Spain, the United States, Texas and Mexico. The analysis of these episodes suggests that irrigated agriculture may be responsible for water shortages inflicted on other users, including urban and industrial ones; and
- salinity problems directly associated with irrigated agriculture have been identified in the Colorado Basin (US) and the Murray Darling Basin. The mitigation and alleviation costs of these two cases are enormous, as shown by the \$756 million commitment by Australian Governments to an Action Plan for Salinity and Water Quality that will be spent over 7 years.²¹

Water pricing reforms impact on the value of irrigators' capital assets. Access to cheap water ends up capitalised either in irrigators' land value or in the value of tradeable water entitlements. Across the OECD, this means that water pricing reforms stir strong opposition from irrigators, who claim to be unprepared to face significantly higher water charges and complain that more expensive water would erode the land and water entitlement value.²²

¹⁸ A Garrido, *Transition to Full-Cost Pricing of Irrigation water for Agriculture in OECD Countries*, Directorate for Food, Agriculture and Fisheries, Organisation for Economic Co-operation and Development, 2002 at 7.

¹⁹ As above.

²⁰ As above at 16.

²¹ As above at 17.

²² As above at 36.

Case study: Increasing the productivity of water through pricing

Not long after its founding, Israel created fixed allocations of water to farms based on the area cultivated, the crops grown, and the water requirements of these crops. Under this system, farmers who irrigated inefficiently suffered because they were unable to irrigate their whole farm. Second, irrigation water was priced according to an increasing block rate structure, so that the more water a farmer used, the more they paid. Third, the government passed the Law of Water Metering which stated that anyone producing, supplying or consuming water had to measure it. This meant that water use could be monitored and measured and irrigators accurately charged for the volume they used. The results of this system were that between 1951 and 1985 Israel reduced the amount of water it used by 37 per cent and achieved a 10-fold increase in the value of agricultural output.²³

Improved water pricing in the irrigation sector can deliver significant social benefits that will offset the costs. Some of the identified benefits of progressive water pricing are:

- an effective means to put an end to new projects that need large taxpayer funded subsidies;
- self-financing of irrigation districts and a reduction of taxpayers' contributions to cover their running costs and capital replacement costs;
- reinforcement of the role of water users' associations, making them responsible for their own water infrastructure; and
- less water pollution as a result of better application efficiency rates, more control of water flows in and out of the district, and easier application of demand management strategies.²⁴

As water becomes more expensive, water conservation will be encouraged. Pricing can also be used to recover environmental costs of water use. For example, in the Central Valley Project in California, irrigators now pay a restoration surcharge to fund environmental restoration works.²⁵ When pricing reflects increased scarcity of water, investment in water efficient technology should occur. Increasing water prices to encourage the adoption of water conserving technologies more quickly may counterbalance excessive water use caused by market failure.²⁶

Pricing the real costs of agricultural production

The White Paper states that extracting water “from rivers and aquifers; whether it be for drinking, watering the garden, flushing the toilet, supporting industry, or agriculture; carries a cost to the environment. This cost, however, is not included in the price we pay for water”.²⁷ In our view, the price of water paid by irrigators should include the environmental costs of extracting and diverting it from river systems.

A number of estimates have been made of economic costs of environmental degradation. CoAG has stated that the total cost of land and water degradation is approximately \$3.5 billion per year. CSIRO has estimated that the specific threats of dry land salinity, acidification and soil erosion are costing us approximately \$1.7 billion per year, and the *Repairing the Country* report estimated these costs at \$1.4 billion a year. This same report has estimated that an investment of \$65 billion over ten years is needed to achieve sustainable natural resource use targets set by the Commonwealth Government. These costs will only increase in future as action is delayed.

However, as these figures are largely based on estimates of reduced productivity and land removed from production, they essentially reflect only the costs to primary production. They do not take into account other

²³ S Postal, *Pillar of Sand: Cant the Irrigation Miracle Last?*, WW Norton, New York, 1999 at 184-5.

²⁴ Garrido, above n 18 at 39.

²⁵ R Johansson, *Pricing Irrigation Water: A Literature Review*, World Bank, September 2000 at 20.

²⁶ As above at 21.

²⁷ DSE, above n 4 at 126.

costs of degradation which are borne by other sectors of our society and economy. These broader costs include loss of environmental amenity and tourism values, impacts on commercial and recreational fishing, increased water treatment costs, degradation of riverine ecosystems and wetlands or the loss of habitat and species.

Furthermore, such estimates of repair costs imply a policy response where Government essentially takes responsibility for fixing the problem — either by directly paying for, or leveraging private investment in repair programs. Such a response fails to capture the complexity of the challenge facing us. Some of the questions that need closer analysis include:

- where is the boundary between private and public good, and where should public funds be most appropriately invested?
- are environmental repair programs simply propping up economically and environmentally unsustainable agricultural industries or are they proactively moving Australia's resource use patterns onto a more sustainable footing?

Natural assets and values

The term “ecosystem services” has been coined to describe the processes and conditions by which natural ecosystems sustain and fulfil human life. Victorians have been able to use and degrade ecosystem services for their own benefit for free, while the costs of repairing landscapes and river systems so they can provide natural services to people have been largely borne by the taxpayer. Ecosystems are the Earth's primary producers, solar-powered factories that yield the most basic natural resources and services at an efficiency and cost unmatched by any current technology.²⁸ Natural assets such as water, soil, air and biodiversity as well as the ecosystems that include and connect them, provide the foundation for our environmental, social and economic welfare. Benefits of ecosystem services that come from these natural assets include:

- inputs to production;
- regeneration of ecosystems, such as healthy waterways;
- pollination;
- provision of shade and shelter;
- insect pest control;
- stabilisation of soils;
- regulation of climate;
- waste absorption and breakdown;
- amenity;
- fulfilment of people's cultural, spiritual and aesthetic needs; and
- options for the future.²⁹

A key focus for this discussion is the ecosystem services provided by healthy waterways and the Murray River in particular. Some of the values of the Murray River identified through community consultation as part of the Murray-Darling Basin's “Living Murray Initiative” include:

- environmental values: unique plants and animals such as the Murray Cod and river red gums; internationally significant wetland areas; seasonal flow patterns on which the breeding cycles of many native plants, insects, water biota and fish in the river, wetlands and floodplains depend;
- cultural values: the river and its floodplain is a living part of the lives and beliefs of Indigenous language groups and nations, and contains sacred and significant places which need to be respected, protected and preserved;
- heritage values: the River Murray occupies an important place in Australia's modern history, being the site of early European settlements and the nation's first great inland transport network. This

²⁸ Victorian Catchment Management Council, *The Health of Our Catchments: A Victorian Report Card*, State of Victoria, 2002 at 3.

²⁹ CSIRO, *Natural Assets: An inventory of goods and services in the Goulburn-Broken Catchment*, 2001 at 5, available at <http://www.ecosystemservicesproject.org/html/overview/index.htm>.

fostered the development of towns and agricultural industry, and a way of life that has been an important part of the Australian identity;

- economic values: the Murray-Darling Basin produces an estimated \$23 billion every year, of which \$6.5 billion is generated by tourism and leisure, \$2.5 billion by commercial fishing and other industries and \$10 billion by agriculture – half of which is earned through irrigation. Food processing, Australia's largest manufacturing industry and employer, depends heavily on irrigation for a steady supply of quality produce; and
- community values: the Murray-Darling Basin is also valued for the way in which it symbolises important qualities of Australian life and our rural communities. People see it as a place of aspiration and achievement, of hard work, imagination, creativity and problems overcome.³⁰

Economic costs of degraded resources

Valuation of the costs of environmental degradation or threats to natural assets is problematic, as it is difficult, if not impossible, to ascribe dollar amounts to many values. Furthermore, given the interconnectedness of natural and economic systems, it can be difficult to separate out costs attributable to single causes, for example, river degradation. In several areas, therefore, the discussion below will unavoidably include estimates of costs which include other forms of natural resource degradation. This has been identified wherever possible.

However, despite the empirical difficulties, a certain amount of information does exist which has sought to estimate the economic impact of environmental degradation. This literature is summarised below, organised according to the following categories of costs:

- hidden subsidies – the hidden costs of current resource use patterns, including the cost to other sectors of living with degraded resources;
- opportunity costs – the costs of doing nothing including the benefits foregone and the reduced capacity to adapt to future shocks; and
- repair costs – the monetary value of current and future actions to undo environmental damage.

Hidden subsidies

The Murray-Darling Basin's agricultural productivity, particularly irrigated agriculture, has been built on resource use patterns which have systematically externalised costs to the environment and other sectors of the economy and society. These costs *do not* include the cost of public and private contributions to repair programs such as Landcare. The consequence of these hidden subsidies is that the Australian community is already paying significant amounts of money to prop up an unsustainable system, over and above the investment they are making through their taxes to repair programs.

Direct financial subsidies

A study undertaken by the National Institute of Economic and Industry Research examined the financial subsidies to a range of Australian natural resource activities including energy production and use, water, wastewater, agricultural chemicals, natural attractions and extraction from fisheries. Financial subsidies were defined as non-recovery of public management costs, favorable tax treatment, direct contributions and lower than normal rates of return.³¹

The study concluded that financial subsidies to the use of natural resources through government payments and revenue foregone totalled at least \$5.7 billion in 1993-94, equal to 4.4 per cent of the total revenue of Australian Governments. Financial subsidies to the Australian water sector alone, in the form of low returns

³⁰ Murray-Darling Basin Commission, *The Living Murray: A discussion paper on restoring the health of the River Murray*, Canberra 2002.

³¹ Department of Environment, Sport and Territories, *Subsidies to the use of natural resources*, A consultancy report prepared by the National Institute of Economic and Industry Research (NIEIR) Canberra, 1996.

to capital and inappropriate pricing structures particularly in rural areas were estimated at \$3.3 billion in 1993-94. It is likely that this figure would now be somewhat lower for Victoria due to the corporatisation of the water sector since 1993, which sought to bring water businesses onto a full cost recovery basis. Nevertheless, subsidies do remain in the Victorian rural water sector in the form of the \$1 billion debt written off by Government as part of the corporatisation process.

A more recent study undertaken by the CSIRO as part of the National Land and Water Resources Audit provided a nation-wide assessment of economic returns to the natural resource base obtained through agriculture, including assistance provided to agriculture. Using “profit at full equity” as a measure of returns to natural resources and managerial skills, the study concluded only relatively small areas of Australia have high returns per hectare – in fact 80 per cent of profit at full equity comes from less than 1 per cent of the area used for agriculture. The study also concluded that the cost of assistance to agriculture in the form of government subsidies, tariff protection, extension support and other means was \$2.2 billion in 1996-97, representing 34 per cent of profit at full equity. Net economic return to the Australian economy from the agricultural sector, (profit at full equity less economic assistance) was therefore \$4.3 billion in that year.³²

Increased water treatment costs

Worsening water quality as a result of rising river salinity and turbidity can impose significant costs on downstream water users – domestic, commercial and local government. A 2002 CSIRO study undertaken for the National Land and Water Resources Audit has estimated that the present value of national costs resulting from deteriorating water quality over 20 years to 2020 range from \$778 million for a 1 per cent worsening of key water quality parameters, to \$1.9 billion for a 10 per cent worsening.³³

Of this, costs associated with increasing water turbidity (as a consequence of erosion) range from \$715 million for a 5 percent increase over 20 years to 2020, to \$814 million for a 10 per cent increase. Victoria’s share of these costs equates to \$122 and \$137 million respectively. These costs include upgrades to existing water treatment plants and increased operating costs.³⁴

The cost to downstream water users of rising water salinity levels over 20 years from 2000 to 2020 is estimated at \$511 million for a 5 per cent increase in salinity, to \$1,021 for a 10 per cent increase in salinity. Of this, costs to Victoria are \$20 million and \$39 million respectively.³⁵

Recommendation:

- **That water used for irrigation should be priced to reflect the real environmental, social and economic costs of water extraction, distribution and management, including the environmental costs of agricultural production, economic costs of degraded resources, direct and hidden subsidies of water irrigation and the value of natural assets and ecosystems.**

5. Conclusion

The White Paper is a bold policy statement that sets out many positive initiatives (some new, some currently underway) for reform of our current water allocation and management system. There are many significant opportunities to improve the management and stewardship of our water resources through implementation of the White Paper's proposed reforms. With sufficient financial, institutional and political backing, these changes should create the foundation for a sustainable water management framework, a healthier natural environment and a genuinely sustainable irrigation industry.

³² S A Hajkowicz and M D Young (eds), *Value of returns to land and water and costs of degradation*, A consultancy report to the National Land and Water Resources Audit, CSIRO Land and Water, Canberra 2002, available at http://econpapers.hhs.se/paper/csireport/02_5F002.htm.

³³ As above.

³⁴ As above.

³⁵ As above.

However, implementation also poses risks that threaten our ability to achieve sustainable resource management and to restore our degraded environment to health. There are dangers in entrenching the status quo, cutting corners in order to meet tight timeframes, failing to provide sufficient resources to meet implementation need and allowing short-term vested interests to override change that is to the benefit of all Victorians. Legislative amendment on its own will be insufficient to achieve the necessary changes in the current culture of water management that will be required to achieve a sustainable approach.

The Victorian Government has made it clear that it understands that a healthy economy and society is dependent on a healthy environment. This understanding must be translated into actions, laws and policies that protect the environment's access to water, create a strong regulatory framework around water markets and promote the continued evolution of pricing systems that value the ecosystem services provided by rivers, lakes, wetlands, creeks and estuaries. When the sustainability of ecosystems is achieved, the human right to water, including consumers' right to affordable, essential water, will become fully realisable.



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Recommendations for legislative implementation of White Paper's proposed reforms

Draft Submissions on behalf of Environment Victoria, Environment
Defenders Office, Australian Conservation Foundation and WWF



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Executive Summary

Environment Victoria, Environment Defenders Office, Australian Conservation Foundation and WWF commend the Victorian Government on producing in the White Paper a bold policy statement that sets out many positive initiatives (some new, some currently underway) for reform of our current water allocation and management system. Environment Victoria, Environment Defenders Office, Australian Conservation Foundation and WWF see many significant opportunities to improve the management and stewardship of Victoria's water resources through implementation of the proposed reforms. However, implementation also poses risks that threaten our ability to achieve sustainable resource management and to restore our degraded environment to health.

In view of these risks and opportunities, Environment Victoria, Environment Defenders Office, Australian Conservation Foundation and WWF have briefed Phillips Fox to prepare submissions on its behalf regarding what it considers to be the key action statements to achieve environmental protection and sustainable river and aquifer health. These comments, intended to stimulate discussion and flag relevant considerations, are set out in this report. A brief summary of the key messages is set out below.

Water Resource Planning

Environment Victoria, Environment Defenders Office, Australian Conservation Foundation and WWF's central submission is that the key to achieving sustainable water management in Victoria is to adopt a holistic and integrated water planning framework which has as its central goal the achievement of a sustainable Environmental Water Reserve. Each level of the planning hierarchy must refer back to the Government's first principle of sustainable water management: that a healthy economy and society is dependent on a healthy environment.

Also integral to the design of the water planning framework is the provision for participation by interested third parties in planning processes. Similarly, decision-making processes that affect the Environmental Water Reserve must take into account submissions by third parties and must provide for review of decisions by a competent court or tribunal. The reason for this is to ensure that the public interest in a healthy and sustainable environment is represented. Involvement and review by third parties will ensure a better informed process and more robust and defensible decision-making.

State Wide Inventory

The Inventory will need to be comprehensive and draw upon current and historical data to compile an accurate picture of the condition of the State's water resources. Legislation will need to state clearly what Inventory must address, including specified indicators (especially climatic trends, pressures on resources), and ecological and other system values.

Regional Sustainable Water Strategies

Regional Sustainable Water Strategies are a vital planning and management tool, providing a mechanism through which to identify for rehabilitation of overallocated systems (recovery of environmental water) and set the framework within particular regions for all water allocation/management decision-making. The process of developing the Strategies must be wide-ranging, public, participatory and not dominated by single interest group.

15 year Assessment of the State's Water Resources

The Assessment must be conducted by an independent body such as the Environment Protection Authority at Minister's direction at a maximum 12/15 year intervals. The Assessment's initial findings should be subject to review by panel which would consider submissions from interested parties. Clear terms of reference must be provided.

Amendment of Entitlements & Use of Reserve Powers

It is vital that the Minister has the power to qualify rights in light of significant changes to river health at any time where required. A clear process for the exercise of the reserve powers to curtail rights permanently is required; however, the Minister may be able to deviate from this process in circumstances of emergency or shortage where use of the powers to curtail rights on a temporary basis is required. Legislation should provide that the Environmental Water Reserve cannot be reduced by a greater proportion than consumptive allocations.

Environmental Water Reserve

The Act must impose a specific process to require the Environmental Water Reserve to be implemented through the planning framework and to be increased within specified timeframes to sustainable levels. Provision must be made for defining the components of environmental water, setting requirements of the Reserve in individual systems, and monitoring compliance with and assessing the adequacy of the Reserve to meet environmental health needs. Where possible, water should be provided as an environmental bulk entitlement, and as a capacity share of inflows to the resource/storage.

Refining Water Entitlements to Improve Choice

Water titles should be issued for all consumptive uses; each title should specify the share of the resource as a number of units representing the entitlement of the owner to proportion of water available in storage or under relevant Streamflow or Groundwater Management Plan.

Reconfiguration of Irrigation Systems

The *Planning & Environment Act 1987* should be amended to require compliance with Reconfiguration Plans in applications to rezone land and for use & development permits.

Regulation of Water Trading

Trading rules need to address environmental impacts of transactions, and require that within specified guidelines, trades do not have an unduly detrimental impact. Consideration should be given to incorporating trading rules and restrictions into Streamflow and Groundwater Management Plans for each system in order to provide an integrated framework for trading and environmental management.

Strengthened Governance Arrangements for CMAs

The constitution of Catchment Management Authority Boards entrenches a situation of conflict of interest by placing consumptive users of the resource in the position to dominate decision-making processes with regard to allocation of water for the environment. Appropriate

obligations must be placed on CMA boards to implement scientific recommendations regarding environmental flows; if not, the provision of water for the environment will be compromised by large water users making decisions in their own interest.

The Government has indicated that it does not currently propose to develop policy outside the limits of that outlined in the White Paper. We acknowledge this position, but note that there is a role for further detailed consideration and advice on how to implement a number of the high level proposals set out in the White Paper. Our materials have been prepared to stimulate discussion of the proposed changes and to provoke thought on how to address implementation issues. We do not consider that this discussion oversteps what is legitimate consideration of how to address the implementation of the White Paper's reforms.

Introduction

This report responds to the Victorian Government White Paper, *Securing Our Water Future Together (White Paper)*, released in June 2004.

Environment Victoria commends the Victorian Government on producing a bold policy statement that sets out many positive initiatives (some new, some currently underway) for reform of our current water allocation and management system.

We see many significant opportunities to improve the management and stewardship of our water resources through implementation of the White Paper's proposed reforms. With sufficient financial, institutional and political backing, these changes should create the foundation for a sustainable water management framework, a healthier natural environment and a genuinely sustainable irrigation industry.

However, implementation also poses risks that threaten our ability to achieve sustainable resource management and to restore our degraded environment to health. There is a danger of entrenching the status quo, of cutting corners in order to meet tight timeframes, of failing to provide sufficient resources to meet implementation needs, of allowing short-term vested interests to override change that is to the benefit of all Victorians. Legislative amendment on its own will be insufficient to achieve the necessary changes in the current culture of water management that will be required to achieve a sustainable approach.

It is vital for Government Ministers and the broader community to be well informed on the opportunities and risks of the reforms detailed in the White Paper. The Government has indicated that it does not currently propose to develop policy outside the limits of that outlined in the White Paper. We acknowledge this position, but note that there is a role for further detailed consideration and advice on how to implement a number of the proposals set out in the White Paper. This report has been prepared to stimulate discussion of the proposed changes and to provoke thought on how to address implementation issues.

The report discusses the major risks and opportunities relating to the action statements that EV, WWF, ACF & EDO consider will have a direct or significant impact on the environment. This is not to diminish the importance of the measures proposed in the White Paper that we have not addressed here; they will be equally significant in implementing change and achieving sustainable management. However, our focus is on achieving environmental protection and sustainable river and aquifer health through legislative amendments that will:

- protect river systems and provide mechanisms for restoring systems to health, through an effective and publicly enforceable environmental water reserve
- specify clear and enforceable duties on water users, environmental water managers and the Ministers for Water and the Environment
- streamline and integrate a raft of complicated legislation; and
- provide for participation in water resource planning and management processes by members of the public and environmental non-governmental organisations.

To this end, we have examined action statements relating to the following topics:

- Sustainable Water Strategies
- 15-year Assessments of the State's Resources; and
- Clarification of the use of the Water Act reserve powers.
- Creation, enhancement and management of the Environmental Water Reserve

Our summary assessment of the compatibility of the actions statements with the *Water Act 1989 (Water Act)* and the Victorian Government's stated fundamental principles for water management is set out below. This is followed by a more detailed explanation of specific proposed reforms together with discussion of likely implementation issues and recommendations for legislative amendments that will achieve the stated aims of the White Paper.

Fundamental Principles for Water Management in Victoria

The Victorian Government has committed to five fundamental principles for sustainable water management which will guide the implementation of the White Paper's proposals. These principles are that:

- The management of water will be based on an understanding that a healthy economy and society is dependent on a healthy environment.
- The government will maintain stewardship of all water resources irrespective of their source, on behalf of all Victorians.
- Water authorities will be retained in public ownership.
- Users of the services our water systems provide should, wherever practical, pay the full cost, including infrastructure, delivery and environmental costs associated with that service.
- The water sector, charged with managing our water systems, will be capable, innovative and accountable to the Victorian Community.

The table that follows sets out the proposed changes in the White Paper against an overview of the current position under the Water Act and the required amendment to ensure that the legislative framework complies with the fundamental principles stated above.

No	Action Statement	Water Act 1989	Comments
2.10	State Water Inventory	No requirement for whole-of-state plan; Minister obliged to undertake continuous program to monitor resources under s22; report on program in Department's annual report, s26.	Healthy environment requires proper knowledge of extent & condition of resource. Act should be amended to incorporate whole of State assessments of resource conditions.
2.11, 3.1, 3.9	Regional Sustainable Water Strategies	Act provides for Water Management Schemes (s213), Management Plans for water supply protection areas and water resource management areas but no requirement for regional Strategies. Authorities with waterway management function to plan for State and local needs and environmental, economic and social values (s189).	Regional Strategies will enable proper planning processes which will lead to more effective resource stewardship. Current Act does not ensure processes consistent across all regions (or waterway management areas).
2.12	15 year assessment of the State's water resources	No explicit requirement for assessment as basis for Ministerial intervention. (Powers of Minister in relation to assessment program set out in s23)	Proposed reform to strengthen transparency and accountability of water sector. Will set timeframes for assessment of resource conditions and provide clear basis for intervention by Minister to curtail rights.
2.13, 4.3	Amendment of Entitlements and Use of the Water Act Reserve Powers	Minister's powers to qualify rights, s13; only allowed to be used in circumstances of declared shortage or in a water supply protection area: s33. See also Minister's powers under ss 307-309. Water Authority may reduce supply (s141); Irrigation Authority, s222(1A)	Ability to intervene relevant to ongoing resource stewardship and management. Clarification of powers will establish clear & accountable process for intervention.
3.1, 3.3, 3.10, 3.11,	Establishment of an Environmental Water Reserve	Environmental protection needs must be taken into account in bulk entitlements, s40(1)(g) and Permissible Annual Volume may be specified through s22A. Management Plans (s32A) may specify conditions	Important to protect environment through careful management and efficient use of resources to ensure economy and society can sustain growth. Explicit articulation of

No	Action Statement	Water Act 1989	Comments
3.13		relating to the protection of the environment.	principles of water for environment and protection of security of environmental water required.
2.4, 2.5	<i>Regulated Rivers</i>	Conditions can be imposed on bulk entitlements. Environmental bulk entitlements can be provided.	Where possible, water for the environment should be provided in the form of environmental bulk entitlements because of the clarity and certainty that this provides.
2.6, 3.5, 3.8	<i>Unregulated Rivers</i>	Streamflow Management Plans may be prepared under s32A (but not requirement). Conditions may be imposed on licences for protection of environment, s56(1)(a)(v).	Should require preparation of SFMP for all unregulated streams. SFMP and licences should provide water for the environment within the framework of objectives identified in regional Sustainable Water Strategies.
2.7, 2.8, 2.9	<i>Groundwater</i>	Permissible Annual Volume may be established (s22A); implemented through Groundwater Management Plan for Water Supply Protection Area (s32A(3)(f)).	Require PAV for all groundwater systems. Require explicit consideration of interaction of surface and groundwater systems.
3.4-3.13	Enhancing the Environmental Water Reserve	No requirement or process articulated in Act for review of Bulk Entitlements or Licence conditions. Some Bulk Entitlements contain review provisions (Minister may amend bulk entitlement at any time, ss44,45, periodic amendment, s64G).	Current Act makes no explicit provision for increasing protection of water for the environment. Planning processes not required to explicitly address targets for rehabilitation. Amendment required. Set objectives through SWS; require monitoring and reporting on specified timeframes.
3.14	Managing the Environmental Water Reserve	General requirement to manage water in equitable manner for long term sustainable use of the resource	Shifting responsibility for waterway management onto Catchment Management

No	Action Statement	Water Act 1989	Comments
		(s1). Authorities with water management functions to identify and plan for environmental needs; to develop schemes to protect and enhance land & waterways (s189), and to carry out functions in environmentally sound way (s190).	Authorities will reduce conflict of interest between different resource management functions and strengthen environmental protection and capability of water sector.
4.1	Refining Water Entitlements to Improve Choice	<p>Water rights currently attach to landholdings in irrigation district (s222); may be transferred to other owner or occupier of land (ss224,228).</p> <p>Delivery capacity currently managed by Irrigation Authority, s224(2); not separately articulated from rights.</p> <p>Because rights linked to land-holdings, no specific site-use licence.</p>	By providing holders of water rights with greater flexibility and choice in determining how and where they use the water to which they are hold an entitlement, will enable water to shift away from lower value uses, will encourage trade which will contribute to economic development and will ultimately enable better control over the environmental impacts of water use.
2.16, 4.2	Establish public register of all water-related entitlements	Authority required to keep register for each irrigation district showing matters set out in s230 including volume attached to each holding. May be in any form Authority considers appropriate (s230(6)).	Register (and statewide accounts) will provide basis for proper and consistent management of resource, and will facilitate regulation of trade and scrutiny of Water Authorities.
3.6, 4.3	Simplifying and Providing More Certainty about Water Shares (including Conversion of Sales Water into Recognised Entitlement)	<p>Sales water a discretionary allocation provided by Irrigation Authority under s222(c).</p> <p>Licences currently valid for 15 years, s56(3); but may be renewed for a longer or unlimited period, s58.</p>	Conversion of sales water into new lower security entitlement, and ongoing tenure of entitlements will provide greater certainty for irrigators, improve environmental allocations in certain systems, and enable more trade (encouraging efficient use of water).

No	Action Statement	Water Act 1989	Comments
4.4, 4.5	Dealing with Channel Congestion & Stranded Assets	Delivery capacity currently managed by Irrigation Authority, s224(2); not separately articulated from rights.	Provisions to allow specified shares of delivery capacity to be traded will facilitate the ability to provide delivery services, and the imposition of the full cost of services on users.
4.7, 4.8	Reconfiguration of irrigation systems	Irrigation Authority must make available for supply water specified in register for each holding, s222(1)(b), but may reduce supply in circumstances of contamination (1A). Decisions about management of system made in context of planning for future needs of the community, s221(1)(b). Include closure of system?	The ability to reconfigure and close unsustainable irrigation systems will enable management of water and land resources based on the true costs of that use.
4.9	Domestic and Stock Rights	Domestic & Stock water available in accordance with s8. Supplied in irrigation districts during irrigation periods (s222(4)).	Making domestic & stock rights in irrigation districts into water rights and permitting trade conflicts with fundamental right to d&s water. Should not be tradeable. These rights should stay with land on which being used.
4.10	Sustainable Water Use on Farms: pollution control	Function of irrigation authority to develop and implement program for improved irrigation, drainage and salinity mitigation practices (s221).	Ongoing development and trialling of innovative methods of accounting for and controlling pollution will move towards management system where users pay full cost of their impacts on resource.
4.11	Sustainable Water Use on Farms: site-use licences	Licences to construct works required (s67); Power to impose requirement for approval for use of water under permanent water saving plan (s170A) but no widespread regulation of on-site water use.	Site-use licences will encourage implementation of best practice land and water management, and will lead to reduced environmental impacts.

No	Action Statement	Water Act 1989	Comments
6.3	Creation of New Pricing Arrangements: Environmental Contribution	No current requirement to make environmental contribution.	Environmental contribution is a sort of payment to the environment for services it provides to the community, and contributes to cost of restoring environmental degradation of natural systems by human activity.
7.1	Monitoring compliance with bulk entitlements	Failure to comply with terms of bulk entitlements is an offence (s47A) but no requirement for independent auditing.	Independent auditing will ensure better accountability for compliance with conditions on bulk entitlements, and with Environmental Water Reserve.
7.2	Management Strategies	Storage operators and resource managers appointed under s43A. Roles and responsibilities not explicitly described (subject to conditions on Order granting bulk entitlement)	Amendment of Act to set out clear role and responsibilities of storage manager will assist development of capable and accountable water sector.
7.3-7.5	Recycled and storm water	Act does not vest ownership of recycled and storm water in Crown (ss7,8). Water Authorities have rights.	Bringing recycled and storm water under Act will ensure all resources are managed under same planning and allocation framework, and may result in better provision of water for the environment through more efficient use of available consumptive resource.
7.6	Shareholder governance of water authorities	Accountabilities across metropolitan, urban, rural, irrigation, catchment management etc Authorities differ across sector.	Making Authorities subject to consistent accountabilities will ensure sector as a whole is more capable and accountable to Community.

No	Action Statement	Water Act 1989	Comments
7.11	Strengthened Governance Arrangements for CMAs	Catchment Management Authorities may be appointed authorities under Water Act, s 98(1)(ab) and are subject to requirements set out in that Act but are established under Catchment and Land Protection Act.	Clarification of confusing arrangements relating to Catchment Management Authorities (establishment, role & functions, responsibilities, etc) will improve accountability and capacity of water sector.
7.12	Improved Integration and Coordination of Authorities: Improved Legislative Framework	Waterway Management Authorities may require contributions from other Authorities (s286) but planning processes do not require cooperation between Authorities.	Improved coordination between Authorities in planning and resource management processes will result in more effective actions and stewardship of resource and environment.

Water Resource Planning

Currently, the Water Act requires the Minister for Water to carry out a continuous program of water resource assessment.¹ However, the Act only goes as far as requiring a report on the assessment program to be included in the Annual Report of the Department; consequently, the provision of comprehensive and publicly available knowledge about the State's water resources through the legislative framework of the Act has been incomplete and inadequate. The current Act imposes no requirement for whole-of-state or regional planning, and current land and water strategic planning documents, such as the Victorian River Health Strategy and Regional Catchment Strategies, are conducted outside the framework of the Water Act.

The Government has committed to significant improvement in river, floodplain and estuary health (through application of the Victorian River Health Strategy and regional River Health Strategies) by 2010. This will require a significant increase in resources invested in water recovery and riparian and riverine rehabilitation. The White Paper indicates that \$100 million has been allocated over 4 years to implement the Victorian River Health Strategy.

COMMENT:

The Water Act should be amended to incorporate better integrated State and regional planning mechanisms. The White Paper's proposed reforms take steps to address the need for better planning and knowledge of water resources. In implementing the reforms, the Government should be mindful that a robust planning system for water must be based on coherent guiding principles, must identify priorities and timeframes, must be integrated with other (land-use) planning frameworks, and must be adequately funded and resourced.

Guiding Principles

A planning framework that integrates principles of ecologically sustainable development (ESD) into the planning process is the key to successful and sustainable management of our water resources. Currently, the *Water Act 1989*, the *Water Industry Act 1994* and the *Catchment & Land Protection Act 1994* (CaLP Act) do not incorporate or prioritise clear ESD principles, and there is no substantive duty on the Minister for Water to provide for the ecologically sustainable management & development of water resources when granting entitlements to water, or to rehabilitate and protect degraded aquatic ecosystems.

The legislation should be reformed to firmly entrench ESD principles and an obligation to comply with these principles should be imposed on all persons involved in the allocation and management of water resources.² In the absence of such legislative commitment, the current approach under the Victorian River Health Strategy could be viewed as a loosely worded promise which provides no real security for aquatic ecosystems or wider environmental needs.

Identification of Priorities & Timeframes, Integration with Other Planning Frameworks

Broadly, the planning framework must also identify priority uses of water, systems and sites for protection, restoration and rehabilitation, and timeframes against which progress will be measured. This is currently achieved through the *Heritage Rivers Act 1992*, but this process will need to be better integrated into the land and water planning framework.

¹ *Water Act 1989* (Vic), s22.

² Institute for Rural Futures, *Legal Issues Relating to Water Use* (Issues Paper No 1), p27.

It is acknowledged that in the White Paper, the Government has identified certain regulated systems and 21 unregulated rivers as systems in which immediate action will be taken to improve river health; however, these priorities for restoration must be set through a process that links back explicitly into the broader strategic planning mechanisms and processes, including timeframes set through other planning processes (such as through the *Heritage Rivers Act*, the *Planning & Environment Act* and the *Catchment and Land Protection Act*), and policy initiatives such as the Living Murray and the National Water Initiative³ processes.

Timeframes (however they are set in relation to individual systems) must be set through a statutory process with appropriate provision for monitoring and accountability.

Adequate Funding

Adequate funding of research into identification and protection of significant river systems, wetlands, estuaries and groundwater dependent ecosystems is fundamental to the ability to plan appropriately for the ongoing protection, restoration and use of our water resources. The government must provide sufficient, stable and ongoing funding to carry out this work.

RECOMMENDATIONS:

Insert clear principles of ESD into the objects in section 1 of the Water Act.

Insert obligations upon the relevant decision-makers (Minister, Department, Authorities) to comply with principles of ESD.

Insert the following purposes/objectives:

- to provide for the fair, orderly, economic and **sustainable use and development** of water resources (amending 1(c)); and
- to ensure that explicit consideration is required of the likely environmental, social and economic effects of the development of water resources; and
- to provide for the maintenance of ecological processes and genetic diversity; and
- to encourage the achievement of these purposes through positive actions by authorities

Ensure Planning Framework is statutorily based and provides for monitoring and reporting against targets and timeframes.

White Paper's Specific Proposed Actions for Water Resource Planning

The White Paper proposes that the Government will undertake three measures to improve water resource planning for the whole of Victoria. These are a state-wide inventory of resources, the development of sustainable water strategies for identified regions, and an ongoing process of review of resources every 15 years (as a trigger for further reforms and

³ For example, paragraph 41 of the Intergovernmental Agreement on the National Water Initiative notes that under existing NCP agreements, arrangements for addressing overallocated and overused systems must be substantially completed by 2005, with substantial progress to be made in adjusting these systems by 2010.

reallocation of resources). These measures will form the basis on which the Government will consider using its reserve powers under the *Water Act 1989*.⁴

State Water Inventory

Action Statements: 2.10

The government will carry out and publish a high-level Statewide Water Inventory of current water resources, including surface water, groundwater, recycled water and stormwater. It will examine the condition of, pressures on, and trends for those resources, and will (in part) draw upon pre-existing information sources. The Statewide Water Inventory will satisfy the Minister's obligation under section 22 of the Water Act to ensure that a continuous program of water resource assessment takes place, and will be updated every 5 years. The initial Statewide Water Inventory will be produced by early 2005, and will establish guidelines and terms of reference for the production of regional Sustainable Water Strategies.

COMMENT:

The Statewide Water Inventory is a vital tool that will enable Victorians (both managing agencies and other interested bodies) to establish a credible benchmark against which change in the conditions of water resources and the progress of reforms can be measured. However, for the Inventory to provide an accurate picture of the current state of our water resource systems, it will need to place the information that it collates in an appropriate context. This will require the incorporation of historical data, where it is available, including from sources such as the National Land & Water Audit, the Wild Rivers Database, the National Directory of Important Wetlands, and other relevant State and local inventories and databases.

The Inventory should be comprehensive (i.e. it should include rivers, wetlands, estuaries and groundwater); should specify the boundaries of systems (and their interconnections); and should contain information on the values of particular sites.

We query whether 5 years is an appropriate timeframe for conduct of the Inventory: in order to track emerging trends, a more frequent interval (such as an annual audit and report) is necessary.

RECOMMENDATIONS:

Amend section 22(1)(a) of the Water Act to modify Minister's role to carry out continuous program of assessment to specifically include requirements that Minister prepare Statewide Inventory, Sustainable Water Strategies, require conduct of Assessment and Review.

Insert a new section 22AA in the Water Act to require the Minister to conduct a Statewide Water Inventory every [5] years.

⁴ The government has indicated that the key mechanisms used to adjust existing entitlements will be the use of water markets and improvements in efficiency. However, where the assumptions on which current allocations are based are no longer valid (as demonstrated by a downward trend in river health or significant change to the Environmental Water Reserve's percentage share of the resource), the government may intervene to vary entitlements. In future, where adjustments occur regularly, the government may consider redesigning entitlements to ensure the Environmental Water Reserve stays constant (for example, to give the environment a percentage share of inflows to the resource).

The Inventory must address:

- identification of systems, boundaries and interconnections
- the current & historic levels of allocation & usage of surface water, groundwater, storm and recycled water within (and between) particular identified systems
- the impact of water savings programs on the ecological health of Victorian rivers and aquifers
- the current & historic condition of rivers and aquifers across the state by classifying rivers in accordance with the Heritage Rivers Act, the Victorian River Health Strategy and comparing against previous National and State Inventories
- climatic, industrial, agricultural, economic, environmental and geographical conditions, trends & pressures on the resource within (and between) particular systems.

Guidelines and Terms of Reference for Regional Sustainable Water Strategies

Guidelines and terms of reference for the production of regional Strategies (to be set out in the Inventory) should include:

- any water or land management policies, principles, standards or guidelines issued by the Commonwealth or the State, including:
 - National Principles for the Provision of Water for Ecosystems
 - National Water Quality Management Strategy
 - State Environment Protection Policies (Waters & Groundwaters of Victoria)
- quality scientific, ecological, economic and social information from reputable expert sources according to relevant national standards
- State planning policies and any applicable planning instrument, such as environmental impact assessment laws
- any approved Regional Catchment Strategy, River Health Strategy, salinity action plan, land management plan or similar document
- consideration of key species or aquatic assets, including:
 - State or federally-listed threatened species that depend on surface or ground water flow
 - Migratory species listed under International Treaties
 - Protected areas affected by water flow
 - Wetlands of national or international importance

See also the matters the Minister must have regard to in preparation of the Strategies as set out below.

Regional Sustainable Water Strategies

Action Statements: 2.11, 3.4, 3.5, 3.9

On the basis of the information obtained through the Inventory process, the Department will prepare five regional Sustainable Water Strategies. These will focus on particular problems (supply, quality) and opportunities (to improve health/security) for the region's resources, and may set priorities for infrastructure (especially for water recycling), reallocation and managing changing demand, and directions to enhance supply across Authority boundaries. The Strategies will also aim to raise regional community awareness of the long-term water situation and how members can act to improve it.

The Sustainable Water Strategies will have broad planning horizons of 15 years and beyond, but where required may be revised or replaced at shorter intervals. The strategies will be developed through consultation with stakeholders (Catchment Management Authorities, Water Authorities, local government, indigenous and other communities) in a process that will commence progressively over the next two years.

It is envisaged that the Sustainable Water Strategies, prepared in 5 regions across Victoria, will satisfy the requirements under the National Water Initiative for regional planning mechanisms.

COMMENT:

The White Paper gives responsibility for preparation of the Strategies to the Department of Sustainability & Environment. However, to be enforceable, the responsibility for preparation of Sustainable Water Strategies should be placed on the Minister (and delegated to the Department), and to be effective, the Strategies will require broad-based expert and community input. The stated purpose of the Act outlined in s.1(e) of maximising community involvement in the preparation process could be achieved by requiring consultation with experts from specified disciplines, and imposing notice requirements, allowing public submissions, and requiring consideration of those submissions in a manner similar to Panels appointed in the event of contested applications to rezone land under the *Planning & Environment Act 1987*.

The Strategies must be given legislative basis. The legislation should set out the matters that must be considered in preparing the Strategy (and reiterate the terms of reference and guidelines set by the Inventory). Once endorsed by the Minister, the Strategy should be tabled in Parliament, and made publicly available. Within a certain specified time, the Minister should be required to report to Parliament on progress made towards achieving the targets set in the Strategy. The Strategies should be required to be replaced at least every 15 years (if not before, in accordance with specified triggers including river health, flow and extraction thresholds, and changes to inflow caused by global warming). A 5 yearly review should be undertaken in order to assess the overall performance of the plan and provide feedback to the CMAs, water authorities, government, community and water users on the performance of the plan and identify any key trends and issues for the major review.

It is also necessary to ensure that conflicts of interest are avoided or balanced where possible. Current water allocation consultative committees are dominated by consumptive water users and have failed to provide environmental flows regimes to Victoria's river systems. This can be ensured by implementing an open and consultative process of strategy development that reflects all interests and does not allow a single interest group to dominate decision-making processes.

The Strategies are an appropriate place in which to identify river and wetland systems with '(inter)national values' which would qualify for funding under the CoAG's National Water Initiative.

RECOMMENDATIONS:

Insert a new section 22AC before Division 1A: Sustainable Water Strategies.

In preparing or reviewing a Sustainable Water Strategy, the matters the Minister must have regard to include:

- the outcome of any Assessment undertaken in accordance with section 22AB and any scientific report arising from that Assessment;
- a requirement to address overallocation, and to specify pathways and timeframes to achieve an ecologically sustainable Environmental Water Reserve, based on an independent scientific assessment of what is required to restore or secure ecological health and with a view to achieving the environmental flow objectives for the protection of aquatic ecosystems or other beneficial uses identified in any relevant State environment protection policy;
- the matters taken into account under section 40 of the Act; and
- any relevant-
 - i) Biodiversity Strategy; and
 - ii) Water supply protection area management plan; and
 - iii) Irrigation Development Guidelines; and
 - iv) Nutrient Management Plan; and
 - v) Regional Catchment Strategy; and
 - vi) Regional River Health Strategy; and
 - vii) Regional Waterway Management Plan; and
 - viii) Floodplain Management Plan; and
 - ix) Salinity Management Plan; and
 - x) Special water supply catchment areas or plan; and
 - xi) Any relevant management plan or strategic directions statement affecting a Ramsar wetland; and
 - xii) Victoria's Native Vegetation Management – A Framework for Action, as amended, or other State policy for the protection of native vegetation.;
- The report and recommendations of any panel appointed under this Act or the *Environment Effects Act 1978* to consider:
 - the development or amendment of a sustainable water strategy; or
 - issues relating to the sustainable allocation of water resources in the relevant geographical region.
- the achievement of the environmental objectives of the Strategy including the management of water trading in a manner which does not prejudice the achievement of those objectives;

- a requirement to develop regional targets for water quality and resource condition (in accordance with Clause 24 of the SEPP);
- consider the impact of water savings programs on the ecological health of Victorian rivers and aquifers;
- Murray Darling Basin Cap and any other system caps as appropriate;
- Conditions, trends and problems identified through the Inventory process;
- the need for adaptive management, where adaptive management means responding to changing environmental conditions and community expectations, and providing the opportunity for systems to evolve and respond to improved scientific knowledge.
- a requirement to conduct public consultation and to consult with all relevant water management bodies including the Catchment Management Authorities, Water Authorities, Environment Protection Agency, and Local Councils
- a requirement to incorporate relevant recognised national and State principles and standards

Each Sustainable Water Strategy is to provide, as appropriate:

- Objectives for that region eg community values for that system, protection of environmental values, efficient management of water system etc
- A description of the existing conditions within the area including, as appropriate, ground and surface water hydrology including any interaction between these, riverine ecological conditions, current water and land use patterns, historical climatic data, current water allocations, social and economic characteristics
- Recognition of all water uses, both consumptive and non-consumptive, including system losses, emergency water, environmental water, domestic and stock and all water formally allocated under bulk entitlements and licenses;
- Measures to ensure that water savings programs have a beneficial impact on the ecological health of Victorian rivers and aquifers. If savings programs have led to a decrease in the level of water received by the environment in the Region, the Strategy must identify a program to ensure the savings generated do not lead to a decline in the ecological health of the waterways or aquifers of the Region.
- Rules for water allocation, seasonal water allocation and accounting for water use
- Rules by which water may be allocated for the use of water customers within the region in accordance with access licences to be issued by the authority, including environmental assessment requirements for access licence applications
- Identification of key aquatic conservation assets and their water requirements, such as wetlands of national and international significance, sites used by migratory birds protected under the Japan-Australia and China-Australia Migratory Bird Agreements, estuaries and protected areas

- Identification of the water dependant ecosystems and their needs, including listed threatened species identified under State or Federal legislation or key environmental concerns, including potentially threatening processes identified under the FFG Act or the EPBC Act
- Any significant water interception activity that, according to National Standards, is deemed to have a quantifiable impact on security of water resource available (e.g. farm dams, large scale agriculture and forestry)
- Recognition of the volume of water allocated to and received by the environment and the entity entrusted with that water or holding that water under an allocation or other instrument
- River health, flow and water extraction thresholds to act as triggers for adjusting the shares between extractive and instream uses
- Processes by which environmental water will be provided
- Development of a plan to fund water acquisition where required
- Regional targets for water quality and resource condition
- Provision for salinity credits, polluter pays and similar arrangements in relation to the grant of water access licences and water use permits
- Identification of priority systems for restoration of water quality objectives and responsibilities and timeframes for achieving targets
- Steps to address the conditions, trends and problems identified through the Inventory process
- steps for compliance with Murray Darling Basin Cap and any other system caps as appropriate
- Recognition of native title and/or or customary use of water sources existing in the region
- Specification of works which require consent and works which may be carried out in accordance with the plan
- Requirements for the referral of certain types of licence and permit applications to other authorities (eg. government departments, local council, other planning authorities)
- Rules for the trading of water (ie. the transfer or movement of water access licences between owners and between land within and outside the water resource management area) in a manner which does not erode environmental values
- identification of measurable water recovery, quality and other objectives to be achieved within identified timeframes

- specification of a monitoring program to track and report on progress against objectives and timeframes.

Preparation of Strategies

SWS to be prepared by DSE in consultation with a consultative committee made up of government and community representatives.

Sustainable Water Strategy consultative committees should have clear duties to protect the environment specified in the Water Act and not be dominated by any single interest group.

Strategies must specify timeframes and responsibility for implementation actions so as to ensure accountability for meeting targets.

Strategies will need to be staged (both as to timing and area) and the Act could allow for a number of triggers for preparation of Strategy to permit this. One trigger for preparation of a revised Strategy will be where the findings of an Assessment demonstrate that review of the Strategy is required.

The procedure for preparation of Strategies should be along the lines of:

- Notice to be provided to all relevant Authorities and other interested parties that a draft Strategy to be prepared, seek submissions.
- Draft Strategy to be prepared and placed on public exhibition for a period not less than 2 months.
- Any person may make submissions in relation to the draft Strategy during the period it is on exhibition.
- All submissions to be considered by the Department which may review and modify the Strategy accordingly.
- The Strategy and all submissions are to be referred to an independent panel which is to be established for the purposes of reviewing the Strategy and considering all submissions, and making a recommendation to the Minister regarding adoption of the Strategy.

The panel must consider all submissions referred to it and give a reasonable opportunity to be heard to any person who has made a submission, DSE, CMAs, any authority under this Act, any municipal council, and any other person who the Minister directs.

The panel is to conduct hearings - not bound by the rules of evidence, may inform itself in any manner it sees fit, must act in accordance with the rules of procedural fairness, accord each person an opportunity for a fair hearing etc.

Machinery for the operation of panels is proposed to be included as a separate division e.g refer to Part 8 of the Planning & Environment Act 1987, especially sections 159 to 168.

Panel must prepare a report recommending any changes to the Strategy and may comment on any other relevant matters, having regard to the objectives of the Water Act and the duties of the Minister for Water.

Recommendation goes to the Minister who may adopt the Strategy with or without modification having regard to the recommendation of the panel.

While the legislation must specify a requirement to review the Strategy after a maximum 15 years, other triggers for review (including where the impacts of climate change alter the balance of allocation of water between the environment and consumptive users, and where river health, flow and water extraction thresholds are not met) are also required.

Circumstances in which Strategies can be amended within shorter timeframes could include where the Inventory shows a severe decline or alteration in resource condition from previous Inventories for that region.

Minister is required to report to Parliament on an annual basis on progress against the targets and timeframes set out in the Strategy.

Transitional provisions for the preparation of Strategies should provide set timeframes for development of Strategies and particularly with respect to plans for over-allocated and over-extracted systems (must be dealt with first) and interim precautionary measures must be put in place to protect healthy working and high conservation value systems.

15 year assessment of the State's water resources

Action Statement: 2.12

The 15-yearly Assessment of the State's water resources will provide the basis on which Minister will intervene to vary existing entitlements. The White Paper proposes that the Assessment will be conducted by the Department (in consultation with scientific experts) in the 12th year of every 15 year period, and will determine whether the resource base has declined (and if this has had a disproportionate impact on the environment or particular group of users) and whether river health is declining for flow related reasons. The Assessment will be independently audited and publicly available.

The SWI and SWS will set the benchmark against which future Assessments will measure long-term change.

Where the Assessment indicates the need for adjustment, the Minister will establish an open, consultative Review which will consider what is required by way of corrective action to restore relative balance to entitlements (including environmental) by providing pathways to remedy overallocation, and to achieve a level of river health acceptable to the community. The Minister may set parameters as to how costs of necessary changes will be shared.

The Review will reflect diverse community interests, must include a scientific report detailing risks to river health if the Review's proposed actions do not achieve scientifically recommended environmental flows, and will be carried out in consultation with the Minister for the Environment. The Review's recommendations will be implemented at the end of the 15 year period.

COMMENT:

The Act should require the Minister to request the EPA to prepare the Assessment. This will need to be done in such a way as to link back into the broader planning framework and to the review processes as provided for the regional Sustainable Water Strategies (this ensures that the process is open, consultative and carried down through the various levels of planning mechanisms).

The White Paper proposes that the Assessment must be carried out by the Department and independently audited, but it is the position of Environment Victoria and the EDO that this does not assure sufficient independence between the entity responsible for overseeing the management of the State's water resources (the Department) and the entity that must assess the need to review and reduce rights. This Assessment should be carried out by an independent statutory body such as the EPA, through a process which would allow for the public to make submissions, in order to further the objective of community participation in s.1(e) of the Act, and the technical, scientific and other information inputs audited by the Technical Review Panel.

If the EPA were to assume the responsibility for conducting the Assessment, it would need to be given appropriate statutory powers and responsibility under its own Act, and sufficient financial and human resources to carry out this task.

Once the EPA had conducted the Assessment, it should be subject to review by the Technical Review Panel. The requirement to have the Assessment independently audited by the Technical Review Panel is crucial as it provides a process for verifying that all relevant information and issues have been taken into account in the preparation of the Assessment. The requirement to consider public submissions also achieves this end.

An example of how the review process could work is set out below.

Query whether intervention on a scale of a minimum of 15 years is frequent enough, given the uncertainty and likely change in resource condition resulting from the predicted effects of climate change, and the impact that increased water trading and efficiency measures will have on available resources. The legislative requirement to prepare the Assessment and Review should be imposed on a maximum timeframe of 12/15 years.

Consideration needs to be given to the use of trends as triggers for intervention: there is the possibility for considerable disagreement and uncertainty over when a trend is a trend. One possible approach would be to set triggers based on proportionate reductions of the available resource, such as when total water available reduces by 5% in 5 years.

Action Item 2.12 envisages an open consultative review of the balance between water available for consumption and the Environmental Water Reserve, with the review beginning shortly after the Assessment, with its recommendations being implemented at the end of the 15 year period. The White Paper does not make explicit the relationship between a review resulting from an assessment, and the preparation of Sustainable Water Strategies, the grant or modification of BEs and licences, and the review and modification of SFMPs and GMPs (water management plans under Part 3, Division 3). It is proposed here that where it is concluded on the basis of the Assessment that there has been significant change, the mechanism for implementation will be via review of the SWS, SFMP and GMPs. These should provide the consultation and review opportunities identified in the White Paper

The White Paper suggests that a possible outcome of an Assessment would be that the Minister would use his/her Reserve Powers to alter entitlements. Because the findings of the Assessment would have considerable significance, it is important that the Assessment process is an independent and open one. The findings of the EPA regarding the proposed amendment of entitlements would then be taken into account in the review of the regional Sustainable Water Strategies, and by the Minister in the exercise of his/her reserve powers.

RECOMMENDATIONS:

Insert new Section 22AB before Division 1A: Assessment of State Water Resources.

The Minister must request the EPA to undertake an assessment of the State's water resources at intervals of not more than 15 years, commencing not more than 12 years from the completion of the last Assessment with background research and scientific studies of the environment for each [identified part of the State] for which an assessment is to be undertaken.

The Assessment must determine whether there has been

- a decline in the volume of available water (whether groundwater or surface water), and
- any decline in water quality and the quality of the catchment environment, and
- the amount of water received by Victorian waterways, aquifers or catchments, and identify the factors likely to have led to such a decline.

The Assessment must also identify areas where water quality has been, remains, or is expected to remain in excess of the water quality objectives specified in any relevant State environment protection policy, and must identify where incidences of pollution have been recognised or reported. The Assessment must identify any areas that are polluted (as defined under the *Environment Protection Act 1970*).

This determination must take into account the relevant Sustainable Water Strategy and the Statewide Inventory.

The Assessment to be placed on public exhibition for a period not less than 2 months

- Any person may make submissions in relation to the Assessment during the period that it is on exhibition.
- All submissions to be considered by the EPA which may review and modify the Assessment accordingly.
- The Assessment and all submissions are to be referred to the Technical Review Panel which is to review the Assessment and consider all submissions, and to make recommendations regarding the use of the Reserve Powers.
- The Panel is to conduct hearings - not bound by the rules of evidence, may inform itself in any manner it sees fit, must act in accordance with the rules of procedural fairness, accord each person an opportunity for a fair hearing etc.
- In undertaking the audit the review panel is to consider whether:

The technical investigations:

have used relevant data

have used reasonable values and parameters in calculations and computations

methodologies used in the technical investigations have been properly applied

The findings of the technical investigations in respect of estimated overallocation, environmental flow requirements, reliability of water supply etc are reasonable and can be used in determining environmental flow provisions which balance the needs of the environment and the existing users

The predicted impacts and risks identified to the environment and to reliability of supply are a reasonable estimate of likely outcomes compared to current management arrangements

- Panel must prepare a Report recommending any changes to the Assessment's findings and may comment on any other relevant matters.
- The Panel report should identify any error found would materially affect any of the recommendation made by the EPA.
- Recommendation goes to the Minister for Water and the Minister for the Environment who may adopt the Assessment & Report with or without modification having regard to the recommendation of the panel.

Process to be public, transparent, plain English

Following the conduct of an Assessment which concludes that there has been significant change in the condition of the State's resources, the Minister will require a review of the relevant regional Sustainable Water Strategies in accordance with the provisions of section 22AC. The findings of the Assessment will be taken into consideration in the conduct of any review of a relevant Sustainable Water Strategy.

The terms of reference for the review of the Strategies will specifically require consideration of corrective action in accordance with the Minister's qualification of rights to restore the relative balance between entitlements, and sharing of associated costs.

The review will also require preparation of a scientific report detailing the risks to river health if the proposed actions do not achieve the recommended environmental flows.

Consultation with the Minister for the Environment is required.

Other legislative amendments

There will need to be a number of amendments to ensure consistency between the outcome of the Assessment, the Sustainable Water Strategies and any ground water and Streamflow management plans or other plans prepared irrigation authorities.

Amend Minister's role in section 22 by adding the following words after sub-section (3)(c) "in accordance with an approved sustainable water strategy under section 22AC."

Amendment of Entitlements and Use of the Water Act Reserve Powers

Action Statements: 2.13, 4.3

In regulated systems, the White Paper proposes to use efficiency measures and water markets to achieve adjustments in the existing balance between consumptive and environmental water uses. However, in some instances, Government will use its reserve powers under the Water Act.

The government proposes to clarify the reserve powers to ensure that it can effectively qualify water entitlements in times of shortage (meaning, in addition to situations of emergency or temporary shortage, situations where river or aquifer health is not sustainable). Qualification will only occur where the Assessment and Review process set out above has been carried out. It will not make adjustments using its reserve powers at intervals of less than 15 years.

A clear process will be established for the use of the reserve powers. Compensation will not be paid where the reserve powers are used to restore relative shares of the total resource held by the environment and users where long-term change has resulted from natural events such as climate change or bushfire. Where the necessity for change is flow-related, the allocation of the cost burden will be decided on by the Government in light of the circumstances.

COMMENT:

Resource security has to be matched with the ability to provide for emerging ecosystem needs. For this reason, the reserve powers are a fundamental tool for long-term resource management because they allow adaptive management of the resource, particularly in relation to the likely impacts of climate change. A clearly articulated process for the use of these powers is important to satisfy resource users of the security of their entitlements.

Theoretically, the reserve powers could equally be applied to reduce environmental entitlements as to consumptive entitlements. For this reason, the legislation should be amended to protect the Environmental Water Reserve by ensuring that in the event of reduction, the Environmental Water Reserve cannot be reduced by a greater proportion than consumptive allocations.

The White Paper indicates that reform using the Reserve Powers will not be exercised permanently at less than 15 year intervals. This is a statement of policy, and should not be enshrined in the Act: it is questionable whether it is appropriate to fetter the Minister's discretion in such a way, especially given that the powers will only be exercised permanently in accordance with a legislatively-based and public process that responds to a clearly identified need for reform. It is vital that the Minister has the power to qualify rights in light of significant changes to climate and river health at any time where required. The Minister will retain his powers to curtail rights temporarily in the event of an emergency or shortage. Where a shortage becomes apparent within the stated 15 year timeframe for permanent reform, the Minister may need to implement temporary qualifications of rights prior to permanent qualification, in order to address and protect environmental health needs.

RECOMMENDATIONS:

It would be possible to amend section 13(3) to permit rights to be qualified if the Minister has declared that the approved 15 year Assessment report indicates that qualification of rights is required to achieve the objectives of ecologically sustainable water management.⁵ Where as the result of changes to water allocation under an approved Sustainable Water Strategy, management plan or other instrument or plan prepared and approved under this Act it is proposed to reduce allocations for consumptive purposes such allocations may be reduced in accordance with the approved strategy, plan or other instrument without compensation. (*This is consistent with the NWI agreement*).

⁵ Section 13 must be read with s.33 and Minister may also rely on ss.307-309 to affect / exempt parties from requirements of the Act.

Environmental Water Reserve

In Victoria to date, although some steps have been taken to provide water for the environment, there has been no effective system for managing and resourcing environmental flows.⁶ The White Paper acknowledges that one third of Victoria's rivers are in poor or very poor condition and proposes a number of measures to restore the health of our rivers and aquifers. These include implementing the Victorian River Health Strategy, investing in water recovery, decommissioning Lake Mokoan, boosting resources to Catchment Management Authorities and introducing site-use licence requirements. However, the primary proposal intended to achieve environmental protection in our river and groundwater systems is the establishment of the Environmental Water Reserve.

The Environmental Water Reserve refers to water allocated to maintain the environmental values of the surface and groundwater systems and other water services that depend on a healthy environment, sustain biodiversity, ecological functioning and water quality.

COMMENT:

While in theory the establishment of the Environmental Water Reserve is a major step forward, how effective at protecting the environment the Reserve is will depend on how it is implemented and managed over time, and the degree of legislative and practical protection it is afforded. Bulk Entitlement and Streamflow Management Plan processes similarly promised environmental protection, but in practice have commonly been shown to lead to the entrenchment of interests of consumptive users over environmental needs, and the perpetuation of current degradation, while providing only limited opportunities for improved protection of environmental health.⁷ To date, the environment has generally received whatever water is left over after consumptive uses have been met. This situation is not satisfactory nor sustainable.

Establishment of an Environmental Water Reserve

Action Statements: 3.1, 3.3, 3.8, 3.10, 3.11, 3.13

The Environmental Water Reserve will be established in all rivers and groundwater systems, and will place limits on the water available for consumption which will be set through:

- application of Sustainable Diversion Limits or Permissible Annual Volumes
- rules and conditions in consumptive bulk entitlements, licences and management plans; and/or

⁶ Environment Victoria and Environment Defenders' Office, *Clean Water, Healthy Rivers, Strong Communities - An action plan to protect and restore Victoria's rivers*, EV& EDO, Melbourne, June 2003, 1.

⁷ See, for example, Natalie Fraser, *Are Streamflow Management Plans protecting Victoria's stressed rivers?* (September 2004); Anthony Ladson and Brian Finlayson, *Rhetoric and Reality in the Allocation of Water to the Environment: A case study of the Goulburn River, Victoria* (2001); Dr Poh-Ling Tan, *Irrigators come first: conversion of existing allocations to bulk entitlements in the Goulburn and Murray Catchments, Victoria* (April 2001).

- specification of Environmental Bulk Entitlements (to apply in some regulated systems).

The initial Environmental Water Reserve will consist of the water remaining in the system after the recognition of existing consumptive entitlements, and effectively operates through the current framework for water allocation employing tools already available to water managers under the current Water Act. Sustainable Diversion Limits and Permissible Annual Volumes will be established and enforceable under the Water Act, and there will be a moratorium on new diversions in all fully allocated river basins and aquifers until these caps are in place.

The Environmental Water Reserve will be held by the Minister for the Environment and will be managed on behalf of the Minister by the CMA. Environmental water will be given appropriate statutory recognition, and have at least the same degree of security as consumptive entitlements. The legal status of the Environmental Water Reserve will be equivalent to water allocated for consumptive purposes, and the Sustainable Diversion Limit and Permissible Annual Volume will be established and enforceable under the Water Act. There will be a moratorium on new diversions in all fully allocated river basins and aquifers until these caps are in place.

COMMENT:

Starting Point

The major issue with the Environmental Water Reserve is that the starting point for its establishment is generally set as the water remaining after current allocations have been satisfied.⁸ Labelling the water left in the system as 'environmental water' creates the potentially misleading impression that environmental needs are being met, whereas the initial Environmental Water Reserve will merely perpetuate historical (over-)allocation. The implementation of an ecologically sustainable Reserve in over-allocated systems would seem - initially - impossible. Unless the legislative framework imposes a specific process to require the Environmental Water Reserve to be increased within specified timeframes to sustainable levels, the Reserve will afford little or no protection to the environment, regardless of its purported legal status as equivalent to consumptive entitlements.

Until the Environmental Water Reserve reaches sustainable levels in all systems, the primacy of environmental health, in accordance with the government's stated first principle of water management, is not being respected. While the government has noted that 'further action may be required' to achieve sustainable levels, and indicated that the creation of a satisfactory Environmental Water Reserve will depend on a number of measures (including reuse and recycling projects and purchase of water through the market), questions remain over exactly what this further action will entail and when it will be carried out.

Need for integration into planning framework

For this reason, general integration with planning processes and specific timeframes and targets will be crucial to the successful implementation of the Environmental Water Reserve. Timeframes will be set through regional Sustainable Water Strategies and regional River Health Strategies, but (as this will result in policy revisions approximately every 15 years, and the qualification of rights every 15 years) it is arguable that these plans will not be sufficiently flexible (or revised often enough) to enable adaptive management of the Environmental Water

⁸ In this way, the Environmental Water Reserve is no different to historical practice. See The Wentworth Group of Concerned Scientists, *Blueprint for a National Water Plan*, WWF, Sydney, 2003, 7.

Reserve. Streamflow and Groundwater Management Plans will also need to provide appropriate targets for environmental health and triggers for review, so as to ensure compliance with the overarching regional Sustainable Water Strategy.

Statutory Recognition of Environmental Water

Consider NSW model for environmental water having first priority call - development occurs within context of water management plans which set out environmental objectives (s34). If environmental objectives are not being met, development of new resources will be restricted.

Need for clear definition of environmental water

An Environmental Water Reserve is to be provided for all declared waterways and aquifers. The Environmental Water Reserve may be provided through a number of different mechanisms: for this reason, an overview of how the Reserve will be provided in each system will be required. Broadly, the Act must impose a requirement to provide water for the environment in accordance with the National Principles for the Provision of Water for Ecosystems: this means that elements of the flow regime must be linked to the objectives of ecological and ecosystem management.⁹

The component elements of the Environmental Water Reserve must be clearly defined and identified in the legislation. Ideally, this definition would acknowledge the environment's prior right to water to sustain ecosystems. Given the variability of conditions between and within systems, consideration must be given to the provision or specification of environmental flows through a number of different mechanisms, including volumetric and capacity share of the resource and storages (depending on the relevant circumstances). It will also be necessary to consider how to provide for less frequent environmental water (such as floodplain flows 1 in every 10 years).

Particularly within regulated systems, there is a strong argument that the Environmental Water Reserve should be provided as a capacity share of the total available resource (or in certain circumstances, of inflows) because it prevents the environment's share of the resource being eroded by decrease in overall volume of available resource. As experience in the Murray has shown, provision of water for the environment in this form has allowed the environmental manager the greatest flexibility to meet ecosystem needs. In order to be able to provide this, adequate data tracking of inflows in storage (such as an annual framework for calculated inflows into the system) is required. It is also necessary to provide the environment with a share of the channel capacity within delivery systems (so that the environmental manager can release water when they want - otherwise they cannot provide true adaptive management).

RECOMMENDATIONS:

Insert a definition of Environmental Water Reserve into section 3 of Water Act:

"Environmental Water Reserve" means an allocation of water that is provided [*prior to the allocation of water for consumptive uses*] to protect and maintain the environmental values of the water system and other water services that depend upon a healthy environment in accordance with Part 4, Division 1AA.

Amend Water Act to insert new Part 4 Division [1AA]: Environmental Water Reserve

⁹ Sustainable Land and Water Resources Management Committee Subcommittee on Water Resources, *National Principles for the Provision of Water for Ecosystems*, ARMCANZ & ANZECC (Occasional Paper SWR No 3, July 1996).

For the purposes of the Act, the Environmental Water Reserve consists of:

- water that is specified as water that is to be recovered for the environment under a regional Sustainable Water Strategy or a River Health Strategy;
- water that is specified in a Streamflow Management Plan or Groundwater Management Plan as being water that is committed to the environment;
- water that is specified through conditions on a Bulk Entitlement as being water for the protection of the environment;
- water provided as a Bulk Entitlement that is specified as being for the Environment;
- water that is specified through conditions on a licence issued under Section 51 or Section 52 as being water for the protection of the environment;
- water that is donated to the Minister for Environment/CMA/State of Victoria for environmental purposes.

The Environmental Water Reserve:

- is to be held by the Minister for the Environment on behalf of the State of Victoria;
- may be managed by the relevant Catchment Management Authority under delegation from the Minister for Environment;
- is to be recorded in the Register
- is to be set in accordance with the National Principles for the Provision of Water For Ecosystems.

The Environmental Water Reserve should be held by the Minister on trust and expressly vested in the State, on behalf of the people of Victoria. This would give the public an explicit interest in ensuring that environmental flows are complied with (it follows that the Water Act should enable public access to information, and public be able to enforce public rights through the Act).

The White Paper indicates that the evaluation of what is an appropriate Environmental Water Reserve will be based on river health (recognising the implications of change effected by human intervention and management on the river environment - the aim is not to restore rivers to their pristine state).

COMMENT:

Setting the Reserve

The White Paper specifies that the evaluation of what is an appropriate Environmental Water Reserve (i.e. where the limits to consumption will be set) will be based on river health (recognising the implications of change effected by human intervention and management on the river environment - the aim is not to restore rivers to their pristine state). The Department has indicated that the process for setting the way the Environmental Water Reserve will be provided in individual systems will be primarily a technical one. Catchment Management Authorities will be responsible for identifying specific, desired outcomes in each system and determining appropriate flow criteria/volume for the Reserve to ensure river and aquifer health.

Despite the characterisation of the process as a technical one, to ensure that it is sufficiently rigorous, it must be based on the best available science (in accordance with the National Principles),¹⁰ and make provision for public participation and consultation (necessary to ensure that the broader community interest is represented, as well as the specific and private interests of individual water users).¹¹ This will provide a "more defensible outcome" for allocating water to the environment.¹²

The identified, scientifically determined environmental flow needs will be required to be integrated into the planning process (specifically, into regional Sustainable Water Strategies, River Health Strategies, and Streamflow and Groundwater Management Plans) as the starting point for (re)establishing appropriate water allocations to consumptive and other non-environmental uses, and for measuring progress against environmental health objectives.

Providing environmental water through Management Plans

Our understanding of the requirements for environmental water is constantly increasing in sophistication. We recognise now that it is insufficient to merely provide a nominal volume of water for the environment. Instead, flows must be tailored to the needs of individual systems and to specific objectives relating to the desired outcome of management of those systems. For this reason, the framework for provision of water to the environment must be sufficiently flexible and adaptable, while providing for transparency and enforceability of allocations. This will be achieved primarily through Streamflow and Groundwater Management Plans and is discussed at greater length below.

Ministerial Guidelines

Additionally, the Minister is to issue guidelines setting out the approach to the establishment of the Environmental Water Reserve in different types of systems. In conducting water planning and allocation processes, Authorities are to have regard to these guidelines. Guidelines will deal with matters including:

- elaboration on what is meant by a 'precautionary approach' to be adopted in systems that are not currently fully allocated;
- elaboration on how progressive limits will be set in non-renewable aquifers;
- procedure in relation to identifying where systems are at 70% of allocation capacity;
- detail how an ecosystem approach is to be adopted.

RECOMMENDATIONS:

Insert provisions relating to the establishment of Sustainable Diversion Limits in new s22AE:

S22AE(1) The Minister may from time to time by Order published in the Government Gazette, declare, in respect of an area specified in the Order, that the maximum volume of water, whether surface water, groundwater or both, which may be diverted in that area, whether used

¹⁰ Sustainable Land and Water Resources Management Committee Subcommittee on Water Resources, 'Goal' in *National Principles for the Provision of Water for Ecosystems*, ARMCANZ & ANZECC (Occasional Paper SWR No 3, July 1996), 7 (Principle 2).

¹¹ Poh-Ling Tan, 'Legal Issues Relating to Water Use (Issues Paper No1)' Institute for Rural Futures, Armidale, 2002, 27.

¹² Geoff Vietz, 'The "Oliver" Predicament - Asking For More Water For The Environment' *River Basin News* (May 2003) available at <<http://www.rbms.com.au>>.

in that area or elsewhere, under this or any other Act during the period specified must not exceed the volume specified in the Order.

Regulated Rivers

Action Statements: 2.4, 2.5

The White Paper sets out the following proposals in relation to regulated systems:

Overallocated systems

In overallocated systems, the initial Environmental Water Reserve will consist of water remaining after existing entitlements have been recognised (it is recognised that this is likely to be inadequate to protect and maintain environmental values). Further action will then be required to determine how to claw back water from consumptive allocations. The effect of the Environmental Water Reserve will be that no further diversions for consumptive purposes will occur in these systems.

Systems not currently overallocated

In systems that are not currently over-allocated, a sustainable limit will be set on diversions that will protect the environmental values of that system (this will employ a 'precautionary approach' to the establishment of what the environment needs).

Environmental Bulk Entitlements

The Environmental Water Reserve may be provided in the form of Environmental Bulk Entitlements.

Environmental Bulk Entitlements will be established in regulated systems where it is necessary to recover water to enhance the Environmental Water Reserve. The Government has announced 3 new Environmental Bulk Entitlements.

Comment:

Regulated systems are most likely to be overallocated and stressed, with distortion (even inversion) of natural flow regimes. Particularly within regulated systems, the Environmental Water Reserve should be provided as a capacity share of the total available resource (or in certain circumstances, of inflows), preferably as an Environmental Bulk Entitlement. As experience in the Murray has shown, provision of water for the environment in this form has allowed the environmental manager the greatest flexibility to meet ecosystem needs.

Conditions on licences and consumptive bulk entitlements

Conditions may be placed on bulk entitlements that provide for protection of the waterway and the riverine and riparian environment, and implementation of the conservation policy of the government.¹³ Where the Environmental Water Reserve is provided through conditions on bulk entitlements, these will require auditing, monitoring and enforcement of compliance to ensure that flows are provided, integration with other river health and wetland restoration measures; and adequacy of flows and improvement if required.

¹³ Water Act, ss43 (bulk entitlements), 56 (licences).

Existing Bulk Entitlements may be amended by the Minister at the request of the Authority holding the entitlement (i.e. either the Catchment Management Authority or Water Authority), or another Authority with the support of another Minister. This would permit a Catchment Management Authority to request, with the support of the Minister for the Environment, that a Water Authority's bulk entitlement be amended to address environmental needs.¹⁴ The same procedure applies to an amendment of a bulk entitlement as for the granting of a new entitlement. This means that in practice amendment of a bulk entitlement will take a considerable amount of time to carry out. Consideration should be given to amending the Act to allow for amendment of bulk entitlements in accordance with the conclusions of the planning processes (particularly the Assessment and Review) proposed in the White Paper.¹⁵

In relation to Bulk Entitlements, the Minister may sell unallocated water under s47D which requires the Minister to determine that the flow of water out of the storage is adequate to protect the riverine and riparian environment. This should be amended to specifically ensure compliance with the SDL or PAV, and the environmental health objectives as identified for the system through relevant planning processes.

Environmental Bulk Entitlements

Environmental Bulk Entitlements will be held by the Minister for the Environment (with operational responsibility sitting with the Catchment Management Authorities). In future, Catchment Management Authorities will be able to hold Environmental Bulk Entitlements.¹⁶ This will require amendment of the entities listed in section 34(1) to include Catchment Management Authorities, to enable the CMA to hold the bulk entitlement. The provision of environmental water through Bulk Entitlements is perhaps the most easily identifiable and administered mechanism proposed in the White Paper, and should be the preferred means of providing environmental water (where possible) for these reasons.

RECOMMENDATIONS:

Section 34(1): amend Authorities that can hold Bulk Entitlements to include Catchment Management Authorities.

Query whether application requirements under section 36 (particularly notice and panel requirements) apply to Environmental Bulk Entitlements in the same way. It is assumed that the actual nature of the Environmental Water Reserve is already predominantly determined (through planning processes) at this stage (what is the practical extent of the ability to determine nature of allocation?).

Matters to be taken into account under section 40 should be amended to include:

- sustainable diversion limit (where relevant);
- specific requirement that a Streamflow or Groundwater Management Plan be adhered to;

¹⁴ Water Act, s44.

¹⁵ See White Paper, 29.

¹⁶ To enable the Minister for the Environment to apply for and hold Environmental Bulk Entitlements, section 34 of the Water Act must be amended to include this Minister in the definition of Authorities under Part 4 Division 1 of the Act.

- Regional Sustainable Water Strategies, regional Catchment Strategies, and River Health Strategies;
- Requirements of any relevant SEPP
- the purpose for which water is likely to be used; and
- (d) any adverse effect that the allocation or use of the water is likely to have on-
 - (iv) the environment

In relation to approval of the application by the Minister under section 42(2), may need to consider how this applies in relation to provision of environmental water and s40(1)(d) [requires determination in relation to whether there is a significant impact on other water users].

Conditions restricting how the EBE may be managed can be placed on the entitlement through section 43.

Restrictions on trade of Environmental Bulk Entitlements may be imposed through conditions on the EBE and also through requirement of Ministerial approval of transfer under section 46.

Unregulated Rivers

Action Statements: 2.6

Unregulated systems may be stressed (especially in summer) depending on when licences and bulk entitlements are taking water out of the system.

Statewide rules will be released (predicted December 2004) in relation to permissible summer fill, and will cover:

- water quality
- water extracted not to exceed historic levels
- minimum requirements for summer Streamflows
- protection of stock and domestic supplies
- restrictions and rostering rules to share water among users/licence holders.

Highly stressed and high environmental value unregulated rivers

These rivers will be managed through Streamflow Management Plans, which will enhance the Environmental Water Reserve.

Unregulated rivers that are not highly stressed

A ban will be imposed on all new summer (November to June) fill licences.

Where the Sustainable Diversion Limit is not yet reached, new licences will be allowed for winter (July to October) fill.

Unregulated rivers that are stressed in summer

There will be an opportunity for licences to convert from summer to winter fill.

COMMENT:

Conditions on Licences

Conditions may be placed on licences that provide for protection of the waterway and the riverine and riparian environment, and implementation of the conservation policy of the government.¹⁷ Conditions on licences may also currently restrict the purposes for which water may be used (although this is likely to be regulated through the proposed site-use licences).¹⁸ Where the Environmental Water Reserve is provided through conditions on licences and bulk entitlements, these will require auditing, monitoring and enforcement of compliance to ensure that flows are provided, integration with other river health and wetland restoration measures; and adequacy of flows and improvement if required.

Currently, the environmental impact of further extraction is assessed before new licences will be issued.¹⁹ The legislative provisions relating to the granting of all new entitlements should be amended to require the Minister and/or Water Authorities to consider the Environmental Water Reserve, and it should not be possible to grant new entitlements where a sustainable Environmental Water Reserve has not been achieved.²⁰ Additionally, entitlements should not be granted where to do so would result in water quality standards falling below those required by the State Environment Protection Policies. Notice of intention to grant new entitlements should be required and decisions to grant new water entitlements should be reviewable by the Victorian Civil & Administrative Tribunal at the application of any person. This would ensure that the broader public interest in ensuring sound water management and planning can be protected against erosion by individual, private rights.

The application process under section 51B for new take & use licences already requires that an application is referred to the relevant Catchment Management Authority.

Streamflow Management Plans

In overallocated or stressed systems, the Environmental Water Reserve will be set through Streamflow and Groundwater Management Plans by declaring Water Supply Protection Areas.²¹ Plans must be prepared based on detailed studies of the environmental effects of the management and use of water within the area of the plan including any effects outside the area. Catchment Management Authorities will be able to apply to the Minister to declare a WSPA as a body with responsibilities relating to conservation or management of water.²²

¹⁷ Water Act, ss43 (bulk entitlements), 56 (licences).

¹⁸ Water Act, s56(1)(a)(ii).

¹⁹ Gary Howell and Paul Bennett, 'Managing River Flows in Victoria: successes and challenges' *River Basin News* (May 2003) available at <<http://www.rbms.com.au>>, 2.

²⁰ It will be necessary to amend the matters that must be considered and given effect to by the Minister in considering applications for bulk entitlements and for new licences to include: any relevant regional Sustainable Water Strategy; River Health Strategy; Regional Catchment Strategy; Streamflow or Groundwater Management Plan; any Sustainable Diversion Limit or Permissible Annual Volume specified under a declared Management Plan; any relevant guidelines or ministerial directions (e.g. in relation to ban on summer fill licences, moratorium on new entitlements and licences where PAV/SDL exceeded, etc).

²¹ Water Act, s27.

²² Water Act, s27(3)(c).

Streamflow and Groundwater Management Plans will be prepared by CMAs. Currently, these plans go to a technical audit panel. This panel process should be public process providing for all stakeholders to be able to make submissions on the draft plan. This requirement for broad participation will benefit the process of plan development, and will be counterbalanced by the fact that the plan will ultimately still go to the Minister for approval prior to implementation.

A Consultative Committee is appointed by the Minister to prepare a draft management plan under section 29. Currently, the Act requires that (in non-urban areas) at least one half of the persons appointed to the committee must be farmers owning or occupying land in the area after consultation with the Victorian Farmers Federation. This requirement should be removed because it entrenches a conflict of interest by placing resource users in a position where they may have a majority decision-making power. This imbalance means that in the event that the best interests of the environment and the interests of the farmers are not consistent, the farmers are in a position to make decisions that negatively impact upon the health of the resource for all users.

A Streamflow Management Plan or Groundwater Management Plan must specify or make a recommendation to the Minister for the Permissible Annual Volume or the Sustainable Diversion Limit for the declared area to which the Plan applies (section 32A(4)).

The Permissible Annual Volume is established in accordance with the procedure set out in section 22A, by Ministerial Declaration. A new definition (s3) and section (s22AE) should be inserted to permit the Minister to declare sustainable diversion limits for specified areas and time periods.

The draft plan must be prepared in accordance with any guidelines prepared by the Minister (section 30). These guidelines are an appropriate place to address issues such as the policy of imposing a moratorium on new allocations in systems where the PAV or SDL is not being met.

Query whether an 'annual report/plan' is required for management of Environmental Water (particularly with respect to donated water that will not be brought within ordinary planning framework).

These plans are to be prepared based on detailed studies of the environmental effects of the management and use of water within the area of the plan including any effects outside the area. Key elements that must be addressed in formulating individual Reserves in plans include:

- specification of ways in which environmental water allocation requirements are to be met, with reference to objectives and targets for environmental outcomes (water to be delivered to meet these purposes)
- Core hydrological and ecological indicators (including hydrology, water quality, macro-invertebrates, fish, aquatic, riparian & floodplain habitat as appropriate)
- volume of water over some timeframe
- timing and profile of flow requirements (variation)
- water temperature
- water level

- velocity of water
- rate of change of flow
- non-environmental or hydrological performance indicators (including water use efficiency, water use per sector, water traded, economic return per megalitre, indigenous use or other benefits)
- specifically response to expert scientific opinion on required Reserve (and where the proposed Reserve diverges from that recommended by the experts, an explanation of why this is the case)
- where current environmental allocation is inadequate, specify desirable increase in allocation to improve river or ecosystem health over time; and
- Identification of any factors affecting the level of flow in the system, including water savings programs

For some river systems, the most appropriate and informative indicators may relate to the area and duration of floodplain inundation, waterbird breeding, estuarine water quality, or similar.

For systems with comparatively few water users or where extraction causes ecological stress for a relatively short period of time (such as in smaller unregulated streams during spring-summer-autumn), extensive and expensive monitoring against each of these criteria may not be feasible. In such circumstances, monitoring may focus upon a subset of these indicators to yield the most cost-effective and ecologically meaningful information, such as hydrology and water quality.

Will also need to consider how to provide for less frequent environmental water (floodplain flows 1 in every 10 years).

RECOMMENDATIONS:

Conditions on Licences

It will be necessary to amend section 53 (matters that must be considered (1) and matters that must be given effect to (2) by the Minister in considering applications for new licences under sections 51 and 52) to include:

(aa) any relevant regional Sustainable Water Strategy; River Health Strategy; Regional Catchment Strategy; Streamflow or Groundwater Management Plan

(ab) any Sustainable Diversion Limit or Permissible Annual Volume specified under a declared Management Plan;

(ac) any relevant guidelines or ministerial directions (e.g. in relation to ban on summer fill licences, moratorium on new entitlements and licences where PAV/SDL exceeded, etc);

(ad) any other relevant government conservation policy;

(b) matters referred to at s40(1) (as amended).

Streamflow Management Plans

Amend section 29 of the Water Act to remove the requirement in non-urban areas that half the consultative committee members must be farmers appointed in consultation with the Victorian Farmers Federation.

Under section 30, the Minister is to prepare or revise guidelines setting out how certain matters are to be considered or addressed.

Management Plan to be given effect to any approved SWS applying to the area of the Management Plan.

The matters a Management Plan may prescribe (in accordance with section 32A) should be amended to include:

- a mandatory requirement for [section 32A (3) (aa)] provision of the Environmental Water Reserve to meet sustainable water management and environmental health objectives as identified in the Act (s1); as set out in regional Sustainable Water Strategies, etc. Must cover matters including flow patterns, timetabling of releases, etc.
- Objectives for that water system eg community values for that system, protection of environmental values, efficient management of water system etc
- A description of the existing conditions within the area including, as appropriate, ground and surface water hydrology including any interaction between these, riverine ecological conditions, current water and land use patterns, historical climatic data, current water allocations, social and economic characteristics.
- Identification of key aquatic conservation assets and their water requirements, such as wetlands of national and international significance, sites used by migratory birds protected under the Japan-Australia and China-Australia Migratory Bird Agreements, estuaries and protected areas.
- Identification of the water dependant ecosystems and their needs, including local threatened species or key environmental concerns.
- Any significant water interception activity that is deemed to have a quantifiable impact on security of water resource available (e.g. farm dams, large scale agriculture and forestry).
- Murray Darling Basin Cap and any other system caps as appropriate (including amending, Sections 32A(4) and 22A: amend to refer to Sustainable Diversion Limit)
- Flow and water extraction thresholds to act as triggers for adjusting the shares between extractive and instream uses.
- Recognition of native title and/or or customary use of water sources existing in the region.
- Specification of works which require consent and works which may be carried out in accordance with the plan.

- Requirements for the referral of certain types of licence and permit applications to other authorities (eg. government departments, local council, other planning authorities).
- Rules for water allocation, seasonal water allocation and accounting for water use
- Allocation of water according to the degree of security provided:
- Allocation of water for all uses (including stock and domestic, all irrigation water including flood plain harvesting, urban water, emergency water (e.g. for fire control purposes), environmental water, cultural flows (including for indigenous purposes), system losses, electricity generation, mining, any other consumptive use).
- Provision for salinity credits, polluter pays and similar arrangements in relation to the grant of water access licences and water use permits
- The volume of water available for consumptive purposes and the allocation of units to each title under the plan.
- The volume of water allocated to the environment and the entity entrusted with that water.
- The environmental outcomes to be achieved under the plan.
- Rules by which water may be allocated for the use of water customers within the region in accordance with access licences to be issued by the authority, including environmental assessment requirements for access licence applications.
- Rules for the trading of water (ie. the transfer or movement of water access licences between owners and between land within and outside the water resource management area) in a manner which does not erode environmental values.
- Details of the licences or titles to be granted in accordance with the plan.
- Delegation of any functions to other authorities
- Notice of application to be given for specified types of applications under the plan (ie applications that do not meet prescribed conditions in plan).
- Regulate or prohibit the use of water and the development of land for the purpose of using water (to be applied to individual sites through site-use licences).
- Annual monitoring of the achievement of the objectives of the plan, particularly in relation to environmental performance indicators.

Groundwater

Action Statements: 2.7, 2.8, 2.9

How groundwater systems are managed will depend on two factors:

- the degree of stress on system; and

- the degree of interaction of system with surface water systems.

There are 62 Groundwater Management Areas, 35 of which have an established Permissible Annual Volume. The 11 groundwater zones shared with South Australia also have Permissible Annual Volumes. The Permissible Annual Volumes for 5 further Groundwater Management Areas are currently being determined, and Groundwater Management Plans are being prepared for a further 23 Groundwater Management Areas.

Systems not yet fully allocated

In groundwater systems where the available resource under the Permissible Annual Volume is not fully allocated, the Government has indicated that a precautionary approach will be adopted to new allocations and to setting the Environmental Water Reserve.

Where there is significant additional capacity under the Permissible Annual Volume, the Government will offer new allocations through an auction or tender process.

Highly stressed, fully allocated systems and aquifers highly interconnected with stressed surface water systems

In groundwater systems where allocations total 70% or more of the Permissible Annual Volume, a Water Supply Protection Area will be declared, and a Groundwater Management Plan will be prepared.

Non-renewable aquifers

Progressive limits on extraction will be set on a case-by-case basis.

Aquifers with low degree of interaction

The Environmental Water Reserve will be set to protect the integrity of the aquifer and ecosystems depending on the resource.

Aquifers highly connected to surface water systems

Environmental Water Reserve will be set to protect the integrity of the aquifer and to minimise risk of impact of related systems dependent communities.

Further groundwater allocations will only be granted where they do not undermine the Environmental Water Reserve or surface water allocations. Trading rules will be developed to account for the interaction between surface and groundwater systems.

Specific rules will be developed for special areas, where salinity problems encourage the use of groundwater. Other specific measures that will be undertaken to improve groundwater management include a State-wide project to understand the interaction between surface and groundwater systems, a groundwater sharing arrangement with NSW (similar to that with SA), and measures to protect groundwater against impacts of oil and gas exploration in Bass Strait.

COMMENT:

Groundwater Management Plans

The focus on interactions between surface and groundwater in the White Paper reflects the development of a more sophisticated understanding of the hydrological cycle. However, serious commitment to restoration of overallocated groundwater systems is required: to date, management of groundwater systems has been insufficiently ecologically focused, with allocation of some aquifers reaching 500% of the Permissible Annual Volume. Groundwater

management plans must be prepared for all ground water systems (see discussion above under Unregulated Systems in relation to preparation of Streamflow Management Plans).

Groundwater Licences

In relation to new allocations, section 57 already permits the Minister to elect to allocate new water licences under sections 51 & 52, by auction, tender or any other manner considered appropriate.

Enhancing the Environmental Water Reserve

In many cases, the initial Environmental Water Reserve will be inadequate and measures will need to be taken to enhance it. The Environmental Water Reserve will be managed through the regional River Health Strategies prepared by Catchment Management Authorities under the CaLP Act. These strategies will identify priorities for restoration and where extra water is required for the Environmental Water Reserve. The River Health Strategies will form part of a broader integrated restoration program and will permit adaptive management of the Environmental Water Reserve.

The Minister will also identify priorities and projects for water recovery (including volumes, methods of recovery and investment levels) through the Sustainable Water Strategies, based on advice received from Catchment Management Authorities in relation to regional priorities and required flows.

Specific rivers and aquifers will be managed through Streamflow Management Plans and Groundwater Management Plans which will provide a water regime to sustain ecological objectives within 10 years. Where it is desirable to provide an enhanced Environmental Water Reserve in a shorter time, the government will 'co-invest' in measures to implement management plans.

All water recovered to enhance the Environmental Water Reserve will be owned by the State and returned to the environment. Where water is recovered with 'additional outcomes' in mind, that water will be directed transparently.

Regulated Systems

In regulated systems, methods for recovery will focus primarily on water savings (achieved through investment in new technology for channel automation and, in some cases, pipelining, water reuse and demand management), complemented by the purchase of water (where cost effective and appropriate) and other measures. Purchase of water will be carried out by the Department (on behalf of the Minister), targeted in priority areas, and conducted through community tender processes, based on long term benefits.

Savings will also be achieved through broad reform and reconfiguration of irrigation systems with the conversion of 'sales' water to a legally recognised entitlement (with 20% of this water being returned to the environment), and a focus on the rationalisation of systems where irrigation is no longer suitable for various reasons.

The Government will also facilitate temporary or permanent donations (the Environmental Water Reserve will be adjusted accordingly), with a process for temporary donations to be in place for the 2005-6 irrigation season.

Unregulated Systems

The Government proposes to achieve the Environmental Water Reserve in most unregulated systems through management of existing diversions and imposition of Sustainable Diversion Limits, with the key being the alteration of diversion patterns through Streamflow Management Plans (setting out rules relating to security, rostering, trading, allocation of new entitlements) and investment in offset measures with farmers.

The Government has committed to establishing a sustainable Environmental Water Reserve in 21 priority unregulated rivers over the next 5 years through Streamflow Management Plans, shifting summer diverters to winter, and co-investing with farmers to assist with necessary works (such as off-stream dams). In some systems, it is expected to take longer than 5 years to implement a sustainable Environmental Water Reserve.

Groundwater

The costs of recovering more water for the environment in stressed aquifers will be assessed and shared between the government and private users on the basis of the resultant public-private benefits.

The Environmental Water Reserve in Specific River Systems

Certain specific measures will be taken in relation to particular river systems.

- (A) Murray and Snowy Rivers: a significant investment in water savings will be required to achieve a sustainable Environmental Water Reserve in these rivers, however savings alone will be insufficient to claw back required volume of water. Water recovered for the Murray is to be co-funded by other States. This will involve the decommissioning of Lake Mokoan and the allocation of 20% (avg 120,000ML) of the new low reliability entitlement along with 25,000ML of high reliability water to the Murray. A Sustainable Water Strategy will be undertaken for Northern Victoria prior to the end of the first stage of the 'Living Murray' process.
- (B) Thomson and Macalister Rivers: the Government aims to restore environmental flows while ensuring reliability of supply to irrigators and to Melbourne. An adaptive approach will inform environmental flows. Over 10 years, the Government will provide an average of 25,000ML for the Thomson, Macalister and Gippsland Lakes, with 10,000ML to the Thomson 3 months after permanent water saving measures are introduced, and 5000ML to the Macalister by the end of 2006 (through irrigation district project). A further 8000ML will be provided to the Thomson (recovered through systems savings in a process and schedule set out in the Sustainable Water Strategy for the Central Region), and 2000ML for the Macalister.
- (C) Wimmera and Glenelg Rivers: the Environmental Bulk Entitlement held by the Minister, and managed by the Wimmera & Glenelg Hopkins Catchment Management Authority will be amended to include additional recovered water. The Wimmera Mallee pipeline project will save an additional 34,690ML for the environment, which will be used to improve summer base flows and boost winter base and fresh flows. **[check this]**
- (D) Werribee (Moorabool & Barwon) River: the water recycling scheme from the Western Treatment Plant will free up 2000ML of water per year (previously sales water), which will be held on trust for 5 years until salinity levels of the recycled water is reduced. The majority of this water will then be transferred to an Environmental Bulk Entitlement. The

Government will ensure that in enhancing the Environmental Water Reserve, these actions will not impact on users' reliability of supply.

COMMENT:

There are a number of issues that relate to the process for the enhancement of the Environmental Water Reserve. The most significant issue relates to monitoring the Reserve, assessing whether it is providing sufficient water to meet ecological needs, and identifying mechanisms by which Catchment Management Authorities and others can be held accountable for failing to meet specified targets. The proposals relating to the state-wide Register (which will record information relating to all water entitlements), the preparation and reporting of annual State Water Accounts, and the requirement for storage managers to appoint independent auditors to verify compliance with conditions will establish the transparency and tools to verify actual compliance with specified limits and conditions. However, this will not guarantee that the Environmental Water Reserve is actually maintaining the environmental values of the water system, and sustaining biodiversity, ecological functioning and water quality. Review of progress against ecological objectives will be discussed further under Issues with Managing the Environmental Water Reserve.

Savings

The White Paper states policy that *"All water recovered by the Government to enhance the EWR will be owned by the State and will be returned to the environment. Where additional outcomes are sought, such as regional development or social outcomes, recovered water will be directed accordingly and transparently."* It outlines that investments in distribution savings have the potential to save up to 445,600 ML in the Murray Goulburn irrigation areas for example. The White paper also acknowledges the practice of allowing savings generated on-farm to be enjoyed by the farmer to encourage sustainable farming practice as better use of consumptive entitlements. Clearly, water savings projects will have multiple beneficiaries and attract investment tied to particular conditions. Funding difficulties surrounding the Wimmera Mallee pipeline proposal, and the need to attract investment for projects like the Gippsland Water Factory highlight that private interests will stake claims on a significant portion of many savings programs.

Where undertaken for commercial reasons, savings programs also represent significant risks to the health of Victoria's rivers. Changes to irrigation practices in Victoria's North have reduced base flows in the Murray since 1993 by approximately 67,900ML.²³ Without a clear legislative requirement for the allocation of saved water to ensure river health (as appears for example in the Heritage Rivers Act 1992 in relation to the Wimmera Mallee system), the transparency of the process for addressing impacts on the environment from savings programs must be assured. It is recommended that as a minimum, the water planning processes include a requirement that decision-makers, Ministers and panels consider changes to the level of water received by the environment as a result of water savings programs, and to outline measures for redressing the imbalance to ensure river health does not deteriorate as a result of savings programs. Recommendations have been included above in relation to the development of Sustainable Water strategies, Inventories and the 15 year review of resources.

²³ Awadhesh Prasad and Andy Close, "Analysis of Irrigation Returns from Irrigation Districts in New South Wales and Victoria" (MDB Technical Report 2002/3), 11.

Priorities for reform

River Health Strategies will form part of a broader integrated restoration program and will permit adaptive management of the Environmental Water Reserve. The Victorian River Health Strategy gives some guidance on the management approach that will be adopted to achieve the vision for Victoria's rivers set out in the Strategy. It indicates that:

- priority will be given to protecting rivers that are of the highest community value from decline in condition
- condition of ecologically healthy rivers will be maintained
- in remaining rivers, an 'overall improvement' will be achieved in their condition
- damage from future management activities will be prevented.²⁴

Principles for Recovery of Water

Clarification is needed of the circumstances in which water will be considered to be 'water recovered to improve environmental flows' and therefore incorporated into the Environmental Water Reserve. From discussions with members of the Department, it seems that water for environmental flows is that which results from the specific projects articulated in the White Paper. Principles to underpin decisions on the best measures to recover water for the environment include:

- Proposals should be cost effective (volume recouped per dollars invested)
- Cost-sharing between government and water users
- Equity and fairness between all users (Where individual users have allocations reduced on a basis that is different from other users compensation is to be paid to the full extent of the reduced allocation)
- Consideration of broader community/tax-payer costs and benefits
- Consideration of community consultation and local knowledge
- Recognition of any recent reductions and efforts to restore flows in the water management area
- Recognition that it will only get harder over time to restore over allocation
- Recognition of the causes of over-allocation (e.g. past government mismanagement, change in knowledge, climate change, change in policy)
- Quality science and information to underpin decisions.

Under section 44, Bulk Entitlements may be amended by the Minister at the request of the Authority holding the entitlement (i.e. either the Catchment Management Authority or Water Authority), or another Authority with the support of another Minister (i.e. the CMA could request,

²⁴ Department of Natural Resources and Environment, 'Environmental Flows' in *Victorian River Health Strategy*, Department of Natural Resources and Environment, 2002, available at <<http://www.dpi.vic.gov.au/dse/nrenlwm.nsf>>, 'Overview' and Section 3 (39-54).

with the support of the Minister for the Environment, that a Water Authority's bulk entitlement be amended to address environmental needs).

The same procedure applies to an amendment of a bulk entitlement as for the granting of a new entitlement. This means that in practice, amendment of a bulk entitlement will take a considerable amount of time to carry out. Consideration should be given to amending the Act to allow for amendment of bulk entitlements in accordance with the conclusions of the Assessment and Review process set out above.

Monitoring and Auditing of the Reserve

The process and mechanisms for provision of the Environmental Water Reserve must ensure accountability, meaning that the EWR must be clearly delineated, holders of environmental allocations must be clearly defined, and environmental water managers must account for their performance. This requires the use of measurable and enforceable standards and outcomes.

Review of progress against objectives will be conducted through the Assessment process on maximum 15 year cycles; but it will also be necessary to conduct annual auditing of water accounts and performance against environmental indicators which should be carried out by independent auditors overseen by EPA. (This would require amendments to Water Act; Environment Protection Act: could employ audit process but would need to be modified to ensure that independent auditor was an ecological expert). The EPA would review the reports of the independent auditors and would then report directly to the Minister on its findings, particularly on compliance with the SEPP.

Directly related to the monitoring of the Reserve is the issue of timeframes in which a sustainable Environmental Water Reserve will be required to be achieved. We acknowledge that to a certain extent timeframes in which it will be possible to achieve a sustainable Reserve will depend on the current condition of individual systems and the outcome of future actions (and other matters beyond our immediate knowledge and control such as the effects of climate change). However, without a requirement to redress overallocation by a specific target date, there is insufficient legislative incentive to compel remediation. Therefore, we recommend that timeframes as set through parallel policy processes (such as the Victorian River Health Strategy and the National Water Initiative) be incorporated into Sustainable Water Strategies, and that specified times by which specified targets are required to be achieved are set out in the Strategies, and in Streamflow and Groundwater Management Plans.

Although the adequacy of the Environmental Water Reserve will be addressed in the preparation of River Health Strategies and regional Sustainable Water Strategies, further consideration must be given to the way requirements to provide the Reserve are set out in Streamflow and Groundwater Management Plans. These plans should preferably be reviewed on an annual basis and must include agreed measures, indicators of sustainability, and mechanisms for monitoring and review. Should require an independent audit of Plan on annual basis. Findings should be made public and taken into consideration in the formulation of the next Plan.

Clarification is also needed of the circumstances in which water will be considered to be 'water recovered to improve environmental flows' and therefore incorporated into the Environmental Water Reserve. From discussions with members of the Department, it seems that water for environmental flows is that which results from the specific projects articulated in the White Paper. For projects not set out in that document, it is recommended that a legislative duty be

placed upon the Minister for Water to consider the impact of water savings programs on the ecological health of Victorian rivers and aquifers when preparing, considering, approving or amending any relevant:

- Regional Sustainable Water Strategy;
- State Water Inventory
- 15 year assessment of the State's water resources
- Surface Water or Groundwater Management Plan
- Bulk Entitlement

and to provide a program to address such impacts to ensure they do not result in adverse outcomes for river health over the short-term.

Accounting mechanisms must provide that as water is recovered for the environment, the Reserve and the Sustainable Diversion Limit or the Permissible Annual Volume must be adjusted accordingly.

Managing the Environmental Water Reserve

Catchment Management Authorities will be responsible for the operational management of the Environmental Water Reserve. The government will amend the waterway management function in the Act to include management of the Environmental Water Reserve and implementation of integrated and adaptive management of river health. Functions involved in management will differ according to how the Environmental Water Reserve is provided (Environmental Bulk Entitlements will require more active management than conditions on licences or Consumptive Bulk Entitlements).

Operational decisions will include deciding when and where to deploy the Environmental Bulk Entitlement, long-term strategy and trading. Environmental Bulk Entitlements will be able to be traded where this activity complements the ecological objectives of the Environmental Water Reserve (within the constraints outlined in the operating strategy for that part of the entitlement that is deemed tradeable). Each year, trade will have to be approved by the Secretary of the Department of Sustainability & Environment. Money raised will be used for purchase of further environmental flows or covering management costs.

Catchment Management Authorities will work with Water Authorities to maximise the environmental benefits that can be achieved. Water Authorities will be required to liaise with Catchment Management Authorities to develop the most effective delivery patterns, and any change that will have a negative impact on the Environmental Water Reserve will require Catchment Management Authority approval.

Where the Environmental Water Reserve is provided through conditions, these will require auditing, monitoring and enforcement of compliance to ensure:

- that flows are provided
- integration with other river health and wetland restoration measures

- adequacy of flows and improvement if required.

Environmental Bulk Entitlements will be held by the Minister for the Environment (with operational responsibility sitting with the Catchment Management Authorities). In future, Catchment Management Authorities will be able to hold Environmental Bulk Entitlements. Operational decisions will include deciding when and where to deploy the Environmental Bulk Entitlement, long-term strategy and trading. Environmental Bulk Entitlements will be able to be traded where this activity complements the ecological objectives of the Environmental Water Reserve (within the constraints outlined in the operating strategy for that part of the entitlement that is deemed tradeable (Box pg 63). Each year, trade will have to be approved by the Secretary of the Department of Sustainability & Environment. Money raised will be used for purchase of further environmental flows or covering management costs.

COMMENT:

The proposal to give day-to-day management of the Environmental Water Reserve to Catchment Management Authorities is a significant one because, in removing the responsibility for the provision of environmental water from Water Authorities, one of the main conflicts of interest in the current Water Act is addressed. Currently, "economic dependence of water authorities on the sale of water creates a conflict of interest for their role as resource managers,"²⁵ and there is no independent auditing of how much water the Authorities actually deliver to the environment.

CMA board must have environmental resource management experience or access to scientific advice.

Under section 43A, the Minister will be able to appoint the CMA as the storage operator or resource manager (once section 34 is appropriately amended).

Consideration needs to be given to how the CMA will document management of Environmental Water Reserve on annual basis (so as to be able to take into account donated water, and other factors) . One possibility is for donated water be held, on trust, by the Minister for the Environment (in which case, duties placed on Minister as to how he uses that water will be important).

Relationship between Catchment Management Authorities and Storage Manager

In order to be able to manage the operational delivery of the Environmental Water Reserve in an optimal fashion, Catchment Management Authorities need appropriate powers to provide instructions to the storage manager on matters including:

- calling on the water in the Reserve;
- providing information on inflows and outflows in the storage.

Delivery of Environmental Water & Management Costs

The first principle of sustainable water management recognises that a healthy economy is dependent upon a healthy environment: the delivery pricing structure should recognise the water management system's dependence on natural waterways (and the associated

²⁵ Environment Victoria and Environment Defenders' Office, *Clean Water, Healthy Rivers, Strong Communities - An action plan to protect and restore Victoria's rivers*, EV& EDO, Melbourne, June 2003, 9.

environmental costs to these systems) for delivery by providing for delivery of environmental water in regulated systems free of charge. The Environmental Water Reserve must be allocated a share of delivery capacity within regulated systems, separate from storage capacity, that reflects its needs as articulated by CMAs for within particular systems.

This could be achieved by allocating delivery capacity to the Environmental Water Reserve in accordance with requirements as articulated in Streamflow Management Plans, and granting Ministerial exemption to the Catchment Management Authorities from payment of the relevant fees and charges in relation to the Environmental Water Reserve under section 308 (Power of the Minister to Exempt). The environment pays a price for providing delivery services to water users in natural waterways and aquifers; in recognition of this, and of the first principle of sustainable water management, the environment should not be charged for use of delivery capacity within regulated channels and systems.

Restrictions on trade

Need clear principles governing trade of environmental water, and rules as to how the money from the sale of environmental allocations can be used.

Creation of New Entitlement, Licensing and Pricing Arrangements

The system of water allocations must be able to adapt to changing conditions and circumstances. Entitlements are currently conceived of as shares of the resource, with the understanding that the volume supplied will be reduced in times of shortage.

Refining Water Entitlements to Improve Choice

Action Statements: 4.1

In order to facilitate trade, the White Paper proposes to amend the Water Act to separate entitlements into three components, being an entitlement to a share of the resource, a share of the delivery capacity and a site use licence. This will enable mortgages directly over water, assist with leasing of water, enable brokers to offer a variety of flexible products to irrigators, and make supplies and timing more adjustable. This will necessitate the amendment of existing trading rules.

A limit will be placed on water that can be held by non-water users in each supply system, equivalent to 10% of the system's total entitlements (not including the Environmental Water Reserve). Irrigators will be permitted to hold twice as much water as water for which they have site use licences.

COMMENT:

Water titles should be issued for all consumptive uses. Titles are to be perpetual and indefeasible subject to the review process set out above (Minister's reserve powers).

Each water title should specify the share of the resource as a number of units representing the entitlement of the owner to a proportion of water available in the storage or under the relevant Streamflow or Groundwater Management Plan. The title is to record that the share of resources represented and is subject to review in accordance with this Act. The title must also record the reliability of supply as specified in the Plan.

To gain access to the water represented by the water title, persons holding a registered interest must apply to the water authority for the area within which the water is proposed to be used for permission to obtain delivery of the water (share of delivery capacity). Except as provided in a Streamflow or groundwater management plan, a delivery capacity share must not be issued to any person who does not hold a water title or an interest under a water title entitling them to the benefit of the water represented by the title.

An Authority may approve access in accordance with any terms and conditions on which water is to be made available including:

- Periods during which water is to be made available.
- Any minimum or maximum characteristics relating to the availability of the water (eg. flow rate, head pressure, maximum volume available during any particular period).
- Access charges and fees including any fees levied by the state or Commonwealth

- Any contribution required to the cost of providing infrastructure to allow water to be delivered to the location required. Such contributions to be reasonable having regard to the proportion of water proposed to be delivered to the applicant.

As part of site-use licence process, water users must obtain approval from the authority for any off-site works including a pump, weir, channel, pipe, floodplain levee or embankment or other work used to access and use water. These approvals should require the appropriate level of environmental assessment similar to that required under environmental planning laws. Assessments undertaken to grant such approvals must consider to the fullest extent reasonably possible impacts on river health, including aquatic biodiversity, threatened species, water pollution, etc. Procedures to be specified for notice of a licence application, objections and consideration of objections.

Establish public register of all water-related entitlements

Action Statements: 4.2

A single, public register of all water-related entitlements will be established. The register will have the capacity to record licences and mortgages, and to keep track of links between unbundled rights, as well as providing the basis for recording metered use (for billing purposes).

The Registrar will supervise and control the register, handle trade between Authorities and produce State-wide information (including regular reporting on ownership and trading). Each Water Authority will administer its relevant section of the register.

COMMENT:

National Water Initiative requires a compatible register to be developed by 2005, with application achieved by 2006.²⁶

There is to be a Registrar of water titles. A central register is to be established for the registration of ownership of water titles and other relevant information. Water titles may be held by a natural person, corporation, authority, trust or other entity. The register is to record the name and address and contact details of the person who is the registered owner of the water title and any other person who has a registered interest in the title. Each title is to be identified by a unique number or code.

The register is to be an electronic database held in a secure and searchable form and is to be searchable by any person electronically or by other means on payment of the prescribed fee.

The register is to provide for the registration of mortgages, caveats, leases and other interests. Register is to be indefeasible.

Titles may be transferred in part or whole on the basis of the receipt of a transfer in accordance with the specified form. Registration of other interests to be on a similar basis.

²⁶ COAG, Intergovernmental Agreement on a National Water Initiative, 25 June 2004, at paragraph 85.

The Register is to note any applicable Strategy, Management Plan, River Health Strategy, and approved site-use licence and must record on the title the share of water allocated to that title under the relevant plan as modified from time to time.

No person other than a registered title owner or a person having another registered interest on a water title is entitled to exercise any rights in relation to that title.

The Register must be able to provide information required to produce water accounts that correlate with planning areas (e.g. basin-wide accounts, catchment-scale accounts, water management area accounts).

Simplifying and Providing More Certainty about Water Shares (including Conversion of Sales Water into Recognised Entitlement)

Action Statement: 3.6, 4.3

The government proposes to give water entitlements unlimited tenure (because of the ability to use the reserve powers to review the total available pool). Once unbundled, water rights and licences will be almost the same except on the issue of tenure (unlimited vs. 15 years but invariably renewed) and the sales water available on some rights.

It will also convert previously discretionary 'sales' water (available in regulated systems) into a new form of lower security entitlement. This entitlement will:

- be legally recognised
- have ongoing tenure
- represent a percentage share of the consumptive pool (volume will fluctuate seasonally); and
- offer lower reliability than existing water rights.

It is argued that legal recognition of this right will provide a firmer basis for planning for both authorities and individuals (giving a more secure title to the resource). The environment will receive 20% of this new lower security entitlement, which will be able to be called out by the environmental manager at the most beneficial times (headworks charges and out of pocket expenses of Water Authorities will be payable). In future, the ability to carry over this environmental entitlement for 12 months will be considered.

COMMENT:

The allocation of 20% of the new entitlement to the environment is a positive move towards restoring overallocation in Victoria's northern systems.

The percentage of the resource allocated under this new lower security entitlement will still be discretionary.

Reconfiguration of irrigation systems

Action Statements: 4.7, 4.8

The Government has indicated that it intends to upgrade and rationalise Victoria's irrigation to ensure that these systems are sustainable and financially viable. Systems targeted for reform will include areas physically unsuitable for irrigation, where large volumes of water have traded out, or which are flood-prone, have outdated systems or are suffering urban incursion. This will create opportunities for water recovery for the environment, and where there is a clear benefit, the Government will co-invest to achieve this aim.

Water Authorities will be able to stop supply either:

- by agreement with all directly affected customers; or
- through an infrastructure reconfiguration plan prepared consultatively by the Authority and endorsed by the Minister. If the Authority does not prepare a plan within a certain time, the Minister may appoint an expert panel to prepare one.

The Reconfiguration Plan must set out the options for each element of the channel or service, including timeframes for closure, etc. If the service is closed, properties with no share of delivery capacity will lose their right to be supplied. Alternatively, the service could continue on a minimum maintenance basis. Rebates or other inducements may be offered to encourage holders to surrender their delivery right. If no agreement can be reached, compensation is required to be paid under section 155 of the Water Act (and any other applicable laws).

In reconfiguring irrigation systems, the Government will require water authorities to adopt a set approach which involves:

- sharing information with customers and consulting with the broader community
- being commercial in providing services to customers (and phase out where this is not viable)
- identifying feasible supply options for remaining viable customers
- charging proposals subject to the scrutiny of the Essential Services Commission; and
- in upgrading or installing services, looking at a range of pricing and delivery arrangements.

Consideration will be given to integrating rationalisation programs with land use controls through the *Planning & Environment Act 1987*. Where local communities experience major impacts from closure of parts of a system, the Government will consult as to effective assistance that may be provided.

COMMENT:

The White Paper articulates a sensible approach to historical legacy of unsuitable and unsustainable development which provides for systemic change and mitigates the impacts on the individuals affected.

The Water Act provides for regulations about transfer of water rights which refer to protection of the process for preparation of Reconfiguration Plans will need to be set out in the Water Act and should provide for rights of review to the Victorian Civil & Administrative Appeals Tribunal on the issue of compensation.

The Planning & Environment Act 1987 should be amended to require compliance with Reconfiguration Plans in applications to rezone land and for use & development permits. Where a plan applies, an ordinarily as-of-right use may require a permit or be prohibited.

Sustainable Water Use on Farms: pollution control and site-use licences

Action Statement: 4.10, 4.11

The Government is investigating the implementation of pollution charges, regulation and tradeable pollution and salinity permit schemes to account for environmental externalities and adverse impacts in irrigation areas. There are a number of issues remaining to be worked through (including variable impacts, equity issues and interaction with Murray Darling Basin Salinity Impact Credits), and the focus will be on continued investigation and trialling of programs.

The Government will continue to provide training and incentives within locally-developed plans to promote best practice irrigation.

When unbundling of entitlements occurs, the Government will create water use licences to control water use, apply site specific conditions and set basic standards for irrigation. All existing irrigators will be granted an initial water-use licence. New irrigation, or redeveloped existing systems, will be required to meet best practice and offset to the extent practicable all adverse side effects. The large majority of farms will be required to implement minimum standards (this will be recorded on the register but an individual licence may not be issued), or site specific conditions carried over from previous licences or water rights will be issued in hard copy. Conditions will be able to be altered but only after a plan endorsed by the Minister proposes new standards.

Site-use licences will be administered by Water Authorities (but they will not set standards in the licence). Licences will cover all water use, will set maximum water use per hectare, and be based on existing Land and Water Management Plans (prepared by Catchment Management Authorities). An Authority will have to give effect to an approved plan in issuing new licences. Charges to cover administration costs (in line with existing usage fees) will apply.

COMMENT:

Site-use licences must be made consistent with existing duty of care provisions under section 20 of the Catchment & Land Protection Act. Regulating site-use under the Water Act provides a mechanism for enforcement of these landholder duties. However, there is an insurmountable problem if water authorities start issuing pollution licences, as Water Authorities have no power to licence pollution, only waste. That could only be the EPA's role. It would be more appropriate to amend the Scheduled Premises Regulations to require licensing of irrigation drainage schemes and other polluting agricultural activities. It would be acceptable for water authorities to certify or licence water use as being efficient by amending s.143 to permit this.

Prior to the commencement of the use of water, unless otherwise provided in the relevant water management plan, a site-use permit must be obtained from the authority for the use of water on an area of land and the carrying out of any works related to the use of water. The site-use licence is a means by which principles of ecologically sustainable development can be applied to individual activities and areas. The licence should require landowners to adhere in a practical sense to a duty of care not to damage dependent ecosystems and the riparian environment, or to significantly alter the quality of water returned to the system. The licence applicant must demonstrate to the satisfaction of the authority that the use of the water will be undertaken on an environmentally sustainable basis and will not aggravate or cause any environmental damage to the land on which the water is to be used.

Site-use licences are to be prepared based on detailed studies of the environmental effects of the management and use of water within the area of the licence, including any effects outside the area. The matters to be addressed in the licence will depend on the nature of the proposed activity but should include:

- Relevant regional Catchment Strategies, Sustainable Water Strategies, River Health Strategies and other relevant land and water management plans
- Capacity of the land to sustain the proposed activity (e.g. limits on stocking or cropping rates)
- Maximum amount of water that can be used at a location
- Practices to minimise the runoff of pollutants including sediment, nutrients, salt, biocides, pathogens and litter to surface and groundwater
- Any relevant industry codes of practice or environmental management systems
- Programs for efficient irrigation and water (re-)use
- Measures for the rehabilitation or protection of riparian areas and vegetation
- Monitoring arrangements to ensure compliance with site-use licence.

Site-use licences will require preparation of whole of farm water use plans, which are designed to demonstrate sustainable water use (including phasing over the life of the plan) and to contribute to broader catchment objectives, and will address soil type, crop, vegetation, ecological assets on farm, rate of water application etc.

Applications for site-use licences should be referred by the Water Authority to the relevant Catchment Management Authority (in accordance with the CMA's responsibilities under the Catchment & Land Protection Act and Clauses 15, 50 and 52 of the SEPP).

Water Act to provide for appeals to Victorian Civil and Administrative Tribunal by applicants against refusal and conditions, by third parties against decisions to grant.

An authority may consider an application for a site-use licence from a person who does not hold a registered interest in a water title for the purpose of identifying the terms and conditions upon which a licence would be issued.

Penalties/order to cease use/enforcement proceedings for breaches of site-use licences and unauthorised use of water and unauthorised works. Government agencies responsible for aquatic conservation and management should be afforded rights to seek to restrain a breach of the act.

Act to provide for the service of a notice on a user, owner or occupier directing him or her to take action specified in the notice, including prevention of damage that has already occurred, rectification of damage, action considered necessary. Failure to comply with a notice is an offence, and authority can enter land and take action specified. Costs will be a debt due by the owner, occupier or user.

Creation of New Pricing Arrangements: Environmental Contribution

Action Statement: 6.3

The Government has decided to impose an annual Environmental Contribution on Water Authorities as a means of generating funding that will contribute towards the measures required to achieve sustainable water management and to address adverse environmental impacts (this is simpler than estimating the value of environmental services, and the costs of environmental externalities both current and historical).

The Environmental Contribution will be calculated as a percentage of existing revenues, and will be fixed for a period of four years. Urban authorities will contribute 5% of their existing revenue, rural authorities will contribute 2% (from 1 July 2005 in recognition of the drought) and there will be no contribution from Goulburn Murray Water until 1 July 2007.

COMMENT:

As environmental economics develops more sophisticated means of accounting for externalities and costing environmental services, the Environmental Contribution should be amended to incorporate these methodologies. An ongoing assessment should be carried out to compare the costs of restoring environmental degradation against the money raised through the Environmental Contribution.

Institutional Arrangements

Action Statements: 3.14, 7.1, 7.2, 7.4, 7.6, 7.11, 7.12

The Government intends to amend relevant legislation to clarify the roles of Water Authorities and storage managers, to strengthen the functions and powers, resources and governance arrangements of Catchment Management Authorities, and to establish a consistent set of Ministerial responsibilities for the Minister for Water and the Treasurer. It aims to establish clear roles for different authorities, increased accountability and innovative service delivery.

The Minister for Water has responsibility for allocating water reserves.

The Treasurer is responsible for overseeing the financial viability of Water Authorities.

The Environment Protection Authority will regulate water quality, and the Essential Services Commission will regulate pricing.

Catchment Management Authorities will be responsible for waterway, regional drainage and floodplain management, river health, and strategic planning in catchments.

Water Authorities provide water supply and wastewater disposal services.

Infrastructure provision will be achieved through partnerships between the public and private sector.

COMMENT:

The relevant clauses of the SEPP (setting out the responsibilities of Water Authorities and Catchment Management Authorities) will require amendment to recognise the Authorities' altered roles, particularly in relation to the provision of environmental flows (see Clauses 15, 18).

Regulation of water trading

Action Statement: 7.1

Water Authorities will administer site-use licences to comply with standards to be set through water use management plans developed by Catchment Management Authorities and endorsed by the Minister for Water (with input from the Environment Protection Agency). Within the Murray-Darling basin, trading will be regulated by the Murray-Darling Basin Ministerial Council. Water Authorities will also administer new registry arrangements.

COMMENT:

Currently, Water Authorities regulate trade through by-laws. The Water Act makes an important distinction between temporary and permanent trade. The regulation of permanent trade requires a more rigorous process than for temporary trade.

Water titles may be transferred, devised or assigned in accordance with the specified form and any requirements of the regulations. A water title is transferred, devised or assigned upon registration. Additional water traded to a particular site must conform to site-use licence (particularly with respect of amount of water allowed to be used).

Trading rules need to address environmental impacts of transactions, and require that within specified guidelines, trades do not have an unduly detrimental impact. Consider incorporating trading rules and restrictions into the Streamflow and Groundwater Management Plans for each system in order to provide an integrated framework for trading and environmental management. Need to balance the interests of the water market (which are, through the NCP and CoAG processes, in effect driving much reform) with those of the environment - in order to comply with the government's first fundamental principle of sustainable water management.

Trade could be regulated by CMAs in accordance with a framework based on the proposed source and destination of water. Within a defined area where the impacts of the trade would not be substantially different, the requirement for approval would be minimal. For trades occurring within a system but outside or between different zones, a higher level of approval would be required. Trading approvals would be conducted in accordance with a process set out in a publicly available document that listed the rules and objectives of trading.

Trading, transfer or surrender of delivery shares and site-use licences may be effected by means of application to the relevant Water Authority, with referral of the application to the relevant Catchment Management Authority.

Where a transfer of ownership of land takes place and it is proposed to continue to access water at that land, an application may be made to the authority to transfer the delivery share and site-use licence to the new owner subject to the same terms and conditions as the existing licences.

Where it is proposed to modify the access arrangements the application for transfer should indicate the changes which are proposed which are to be considered by the authority and a new access licence may be issued subject to different terms and conditions to that previously existing.

Clarity of Roles and Responsibilities

Action Statements: 7.1

It is acknowledged that current monitoring arrangements lack necessary independence, as responsibility rests with relevant resource manager (Water Authority or Department of Sustainability & Environment) appointed by the Minister for Water (this role will now be referred to as 'storage manager'). The Government proposes to appoint an independent auditor to verify compliance by the storage manager with bulk entitlement requirements. Audits will be overseen by the Department of Sustainability & Environment. The role of storage manager will be recognised in legislation as an important water sector management function with a common set of roles and responsibilities including recognition of non-consumptive values of storages, and processes for decommissioning.

COMMENT:

The Act will need to be amended to provide for independent audit of Bulk Entitlement use. The EPA could carry out this role (see comment above in relation to Assessment). As well as verifying compliance with provision of bulk entitlements, auditors should review data relating to inflows into storages.

Recycled and storm water

Water Authorities will be able to use stormwater while ensuring that flows for river health are maintained.

COMMENT:

Recycled and stormwater should be brought to account within the overall water management framework. There should be opportunities for recycled and stormwater to be substituted for potable water (whether used for potable or irrigation purposes) and for tradeable licences to be issued for these types of water.

Strengthened Governance Arrangements for CMAs

Current legislation establishing Catchment Management Authorities will be amended to consist of one clear statement of roles and responsibilities under one Act. Catchment Management Authorities, as for Water Authorities, will have a formal Statement of Obligations.

The governance and funding of Catchment Management Authorities will be strengthened to include performance monitoring and evaluation. Catchment Management Authorities, as caretakers of river health, are to provide integrated river and floodplain management. Legislative amendment to enable Catchment Management Authorities to become active managers of the Environmental Water Reserve and hold Environmental Bulk Entitlements will not occur until a clear policy decision has been made by the Minister and a formal process has been developed. The financial base of Catchment Management Authorities will be reformed to ensure that they have adequate funding to carry out their allotted functions, and they will continue to be able to collect tariffs in specific circumstances.

In metropolitan Melbourne, Melbourne Water is to conduct the operational management of the EWR (and to carry out the functions of a Catchment Management Authority).

The structure of Catchment Management Authority boards will be amended so as to have:

- not more than 9 members
- proven leadership skills, high-level decision making experience and understanding of the role
- representative of
 - land management and water industry experience or strong understanding of natural resources management and water sector issues

- business planning, strategic planning, commercial experience, and financial management
- technical experience (engineering, infrastructure or project management)
- social sciences
- environmental or natural resource management experience
- demonstrated ability to introduce new ideas and innovative practices
- except in Westernport and Port Phillip Catchment Management Authority, more than half the board members must be involved in primary production
- appropriate regional representation (Minister to ensure)
- cross membership with other regional bodies (community focus)
- a separately appointed Chair who will participate in the selection of board members; and
- staggered appointments to ensure continuity of skills and experience.

There is no longer a requirement to have a Department of Sustainability & Environment or a Department of Primary Industries representative on the Board.

COMMENT:

The proposed reforms provide for improved integrated catchment management by giving Catchment Management Authorities a clear and practical role as environmental resource manager with responsibilities for planning and administering land and water management and rehabilitation programs.

The requirements regarding constitution of the Board entrench a situation of conflict of interest by placing consumptive users of the resource in the position to dominate decision-making processes with regard to allocation of water for the environment. While we acknowledge the fundamental importance of working with land managers and farmers to achieve best practice water management on private land, we are concerned that without appropriate obligations being placed on the CMA boards to implement scientific recommendations regarding environmental flows, the provision of water for the environment will be compromised by farmers making decisions in their own interest.

The CMA board must comprise members appointed by the government having expertise or experience in any of the following areas: freshwater ecology, water resource management, economics and markets, public administration and environmental law. The membership is to be independent of government agencies.

CMAs should have all of the powers of a body corporate and may buy, sell and trade water titles, trade water on a temporary or permanent basis, fund environmental projects and may enter into arrangements with government agencies, corporations, voluntary organisations and individuals for the purpose of the protection and enhancement of environmental assets.

CMA's to report to Ministers for Water and Minister for Environment on an annual basis; these reports to be tabled in Parliament.

CMA's are also required to fund, educate and regulate (account for planning, monitoring).

The Statement of Obligations for Catchment Management Authorities should include requirements to:

- classify water sources in accordance with the Heritage Rivers Act and the Victorian River Health Strategy and prioritise works
- report annually to the Ministers for Water and for the Environment
- liaise with relevant Water Authorities and CMA's in preparation of plans

Improved Integration and Coordination of Authorities

The Sustainable Water Strategies will provide the major means by which relevant authorities engage in collaborative and joint planning processes.

COMMENT:

In preparation of the Strategies, the Department will need to acknowledge the expertise that Catchment Management Authorities will possess about regional priorities and problems.

Review and Conclusions

Broadly, the White Paper's proposed reforms have the capacity to provide better protection to the environment than the current system. The reforms will provide designated environmental water managers with clear specification of roles and priorities, which should facilitate the integration of environmental water management with the activities of other water managers, and generally provide for better integrated catchment management across the State. There is an improved focus on the whole water cycle (such as through the requirement to take steps to account for interconnections between surface and groundwater). The articulation of the Environmental Water Reserve provides a mechanism that, with careful legislative enactment and practical application, will enable (but not ensure) restoration of degraded river, wetland and riparian systems.

The reforms explicitly implement a number of the elements of the National Principles for the Provision of Water for Ecosystems and best practice frameworks for environmental flows. For example, they will legally recognise environmental allocations, require action to meet environmental needs, and implement demand management and water pricing measures. While in theory this is a major step forward, how effective at protecting the environment the Reserve is will depend on how it is implemented and managed over time, and the degree of legislative and practical protection it is afforded. Bulk Entitlement and Streamflow Management Plan processes similarly promised environmental protection, but in practice have commonly been shown to lead to the entrenchment of interests of consumptive users over environmental needs, and the perpetuation of current degradation, while providing only limited opportunities for improved protection of environmental health.²⁷ To date, the environment has generally received whatever water is left over after consumptive uses have been met. This situation is not satisfactory nor sustainable.

The key to success of the reforms will be the implementation of a holistic, integrated planning framework, and the integration of the Environmental Water Reserve into that framework to ensure that environmental health considerations are a primary consideration in water allocation and management decision-making. The reforms should provide planning processes that allow for uncertainty, enable change and facilitate improvement in system health (in theory, at least). The use of participatory and open planning processes will provide an avenue for dealing with conflict between competing demands on resources, and will hopefully lead to socially acceptable outcomes in the long-term interest of the community as a whole. However, the White Paper lacks detail on the exact nature of how the public interest will be enshrined, particularly with respect to whether third parties will have standing to enforce environmental water provisions.

Also key to the success of the reforms will be the provision of adequate resources to Catchment Management Authorities (in particular) to carry out of planning processes and implement rehabilitation measures; and to the Environment Protection Authority or other body given the role of monitoring performance.

²⁷ See, for example, Poh-Ling Tan, 'Irrigators come first: Conversion of existing allocations to Bulk Entitlements in the Goulburn and Murray catchments, Victoria' Queensland University of Technology, April 2001; Anthony Ladson and Brian Finlayson, 'Rhetoric and Reality in the Allocation of Water to the Environment: A Case Study of the Goulburn River, Victoria, Australia', 2001.

Other aspects of the White Paper proposals remain unclear (such as whether there will be a requirement for reliance on best scientific information, and the arrangements for how management authorities will be rendered accountable, monitored and reported on). It is likely that it will only become evident in time whether the White Paper's framework of reforms has successfully addressed and adopted environmental considerations, and further reforms may be required down the track to fine tune the implementation of the current round of proposals.