

Draft Sustainable Water Strategy Central Region

Independent Panel's findings

Introduction

In line with its terms of reference, the Independent Panel has assessed the Draft Sustainable Water Strategy for the Central Region (the draft Strategy) and considered the public comments on this strategy provided in submissions and public meetings. It has taken into account the draft Strategy's consistency with the objectives of the *Water (Resource Management) Act 2005* (the Act) and the Victorian Government's commitments under the National Water Initiative. It has also considered the robustness of the knowledge on which the strategy is founded, and the effectiveness of the community consultation process. This report sets out the Panel's findings and is provided to the Minister in accordance with section 22 F of the Act.

In general, the Panel found the draft Strategy to be an impressive first step towards rigorous and effective planning to ensure the long-term sustainability of water resources in the Central Region. Many aspects of the draft Strategy deserve praise. For example, the Panel considers that the guiding principles on which the Strategy is founded are sensible and appropriate. The Panel strongly supports the principle that implementation of the Strategy will aim to be greenhouse gas neutral in the first instance. It also supports the approaches for managing risk and uncertainty, and maximising flexibility.

In addition, the Panel considers the establishment of a cap on river water diversions and the definition of environmental water reserves for each major river in the region are very important steps. It believes the cap will have far-reaching and positive consequences for sustainable, integrated water resources management in the region, and will stimulate innovation, and investigation of alternative water sources.

The Panel also endorses the draft Strategy's emphasis on maximising water efficiency and conservation efforts by all water users. Although conservation alone will not be sufficient to manage future pressures on the water supply caused by growing populations and climate change, the Panel strongly believes that water use efficiency and conservation must be the primary response for achieving the most cost-effective and energy-efficient outcomes. Further, it believes that failure to achieve water conservation targets will ultimately constitute a risk to the water supply.

However, the Panel has also identified a range of areas in which the draft Strategy can be strengthened. In particular, it believes further consideration should be given to the following:

1. Moving to express the cap on river water diversions for consumptive use as a share of the resource not a volume, and extending caps to cover diversions from all water sources
2. Giving high priority to developing and implementing a robust water accounting system and enhanced water metering for the Central Region
3. Improving the knowledge base on river ecology, and using this knowledge to deliver environmental water more effectively
4. Better meeting the requirements of the National Water Initiative
5. Strengthening the approach for achieving more efficient water use, by providing stronger incentives to water users and authorities, setting further water conservation targets, and using benchmarking to drive continuous improvement
6. Revising the State's planning policies to complement Sustainable Water Strategies
7. Integrating strategic planning for water supply, sewer and stormwater networks with water-sensitive urban development
8. Giving high priority to conducting a study of water trading in the Central Region
9. Ensuring rigorous analysis and decision-making based on a wider range of options for new water sources and interconnection of water supply systems
10. Providing the necessary institutional accountability and resources to support adaptive management and implementation of the Strategy
11. Developing a strategy for ongoing engagement of the community and increasing water literacy
12. Understanding and managing the socio-economic impact of the strategy on primary and secondary industries, and on low-income domestic users.

The Panel's findings on each of these areas, and on the effectiveness of the consultation process, are discussed below. Further comments on the draft Strategy's compliance with the requirements under the National Water Initiative and with the objectives of the Act are provided in Attachments 1 and 2.

1 Cap on river water diversions

The Panel considers the establishment of a cap on river water diversions and the definition of environmental water reserves for each major river in the region are very important steps. However, it finds that the Government should move to express the proposed cap and environmental water reserves as a share of the water resource rather than a volume. In addition, the cap should be extended to groundwater and surface water runoff captured in small dams.

This finding reflects the Panel's own views and the limited discussion of this issue in submissions.

1.1 Submission views

There was general support for a cap on river diversion for the region. Two submissions suggested that the environmental water reserve and water diversions from rivers should be expressed as a share of the resource and not as volumetric amount, and noted that this is essential for successfully and fairly balancing water use over time.

Box 1 – Submission comments on cap on river water diversions

The following comments indicate the range of views expressed in submissions on river water diversion:

- "A common approach should be taken to expressing all entitlements, with percentage shares the preferred method"
- "If water use is to be successfully and fairly balanced over time, the environmental water reserve must be expressed as a percentage, not a volumetric account"

1.2 Panel's views

The Panel supports the proposed cap on river water diversions for consumptive use. However, during the next five years, the Government should move to express this cap as a share of the water resource rather than a volume. If it does not, it is highly likely that the volumetric cap will need to be continually reduced as the Central Region's water resource declines with the impact of climate change. This will destroy the cap's credibility. Expressing the cap (and the environmental water reserves) as a share of the water resource will avoid this problem, and ensure that the risk of climate change is shared between all stakeholders.

In addition, appropriate caps should be placed on diversions from all water sources, including groundwater and surface runoff captured in small dams. Without a system-

wide approach, it is likely that once the cap on river water diversions has been reached, users will simply divert more water from other sources, in the first instance by building more catchment dams, or by taking advantage of unmetered groundwater bores.

2 Robust water accounting system

The Panel finds that:

- The draft Strategy's proposal to develop a robust water accounting system, and the proposed categories of water for inclusion in this system are appropriate
- The Government should give the development a robust water accounting system and enhanced water metering immediate priority
- The Government should develop a comprehensive sampling and measurement strategy to better evaluate the impact of small catchment dams on downstream users and river health.

These findings reflect the fundamental and recognised need for better information to support significant decisions on water resource management.

2.1 Submission views

There was general support for the development of a comprehensive water accounting system; however, only a few submissions made specific comments on this issue.

Many submissions focused on small catchments dams and the impact of groundwater pumping, and raised concerns about the need to account for these resources properly. Some submissions commented on the need to develop alternative management models for assessing and monitoring groundwater.

Box 2 – Submission comments on water accounting, groundwater measurement and small catchment dams

The following comments indicate the range of views expressed in submission:

- More work is needed to understand the impact of small catchment dams
- "The issue of small catchment dams cannot be ignored and may ultimately require legislative change, planning scheme amendments or perhaps a regional rationalisation approach"
- "Good water accounting is the basis for good water management"
- A ban on all logging in catchments is supported (regeneration of forests is another interception of water)
- Funding is needed to develop groundwater measurement and monitoring
- Alternative management models for assessing and monitoring groundwater need to be developed.

2.2 Panel's views

The draft Strategy's proposal to develop a robust water accounting system, and the proposed categories of water for inclusion in this system are appropriate. Knowledge of how much water is available, and how much has been allocated and used at any time, is essential for sustainable water management.

The Government should give the development of such a system immediate priority. Over the next five years, a rigorous water measurement and accounting system should be completed, and should encompass the water resource, wholesale, and retail levels, including metering of all users of water in the Central Region. This system would then serve as a model for other regions.

In addition, the Panel notes that increased peri-urban development is leading to an increase in the number of small catchment dams. It is particularly concerned about the impact that further proliferation of these dams (and other forms of interception) could have on downstream users and the health of rivers and aquifers. Therefore, as an input to the development of the water measurement and accounting system, a major sampling and measurement strategy should be developed, to better evaluate the impact of small catchment dams on the availability of downstream river flows for water users and river health. This information should then be used to inform revision of State planning policies, discussed in section 6 of the Panel's report.

3 Environmental water needs

The Panel finds that:

- Further work and significant investment is required to increase the knowledge of river ecology. This knowledge is critical for more accurately defining environmental water needs and delivering the water allocated to the environment in the most effective way
- The environmental allocations in the draft Strategy are a good first step. However, it is too early to determine a final position on sustainable environmental water needs. Improving the knowledge base will assist the community in making informed decisions and trade-offs between river health and consumptive water needs.

3.1 Submission views

There is strong support for the approach outlined in the draft Strategy, but many submissions argued that the proposed flows would not meet scientifically defined needs and that understanding of groundwater/surface water interactions was incomplete.

Many submissions also highlighted the need for further ecological knowledge, and some suggested that more knowledge is needed on most rivers to provide confidence that environmental flows really do benefit river health.

Box 3 – Submission comments on environmental water needs

The following comments indicate the range of views expressed in submissions:

- The draft Strategy does not meet the legislative (Water Act) requirement to identify ways to increase and set priorities for increasing the volume of water in the environmental water reserve to improve the environmental values and health of water ecosystems
- The draft Strategy does not provide for environmental flows for the Moorabool, Maribyrnong and Werribee rivers to be restored
- Ecological inputs into environmental flows studies should be done by freshwater ecologists and not hydrologists, water modellers or “ecologically retrofitted consultants”
- There should be clear links between the final Strategy, Regional Catchment Management Strategies and River Health Strategies
- Minimum environmental flows should be retained as a baseline, and any sharing of loss of allocation due to changed water availability should take these into account.

3.2 Panel’s views

The Panel supports the approach and plans for protecting and improving the health of rivers and aquifers. However, further work is needed to improve the quality of the knowledge base on environmental water needs, and enable this information to be used to deliver the water allocated to the environment in the most effective way.

The ecological data on which the environmental water reserves are based are fairly limited. In addition, it is not clear how appropriate the FLOWS methodology is for determining sustainable levels of extraction from rivers. Significant investment in ecological research is needed to ensure that the environmental reserves are adequate and that the expected environmental benefits are realised from the Government’s substantial investments.

In addition, the ecology of Australian rivers has evolved in an environment of highly variable streamflows. Expressing the environmental reserve as a share of the water resource rather than a volume, and giving environmental managers access to an appropriate reservoir storage capacity, will provide greater flexibility for managing the reserve to better meet environmental needs.

The draft Strategy’s approach for achieving some required environmental outcomes by changing the timing of water releases from reservoirs to provide more appropriate flow patterns is supported by the Panel.

4 The requirements of the National Water Initiative

The Panel finds that the draft Strategy does not fully meet the requirements of a Water Plan in accordance with the National Water Initiative.

This finding is largely based on the Panel's analysis of the draft Strategy, and is consistent with submission views on this matter.

4.1 Submission views

A number of submissions noted that the draft Strategy does not incorporate indigenous social, spiritual and customary objectives, or strategies for achieving these objectives as required by the National Water Initiative.

Some submissions noted that the draft Strategy does not clearly define pathways and processes for returning over-allocated surface and groundwater systems to environmentally sustainable levels of extraction.

Box 4 – Submission comments on National Water Initiative requirements

The following comments indicate the range of views expressed in submissions:

- An appropriate legal framework for the inclusion of traditional owners' water rights in the allocation framework should be developed as a matter of urgency
- "The Sustainable Water Strategy should have regard for traditional Aboriginal owners in central Victoria, not just with respect to their legal rights under the Native Title Act but, more broadly in the context of international human rights obligations"
- While the draft Strategy does not fully meet the requirements to return water to stressed rivers, it represents the most sincere effort of any state
- "While the Strategy acknowledges the difference between over-use and over-allocation of groundwater, it does not commit to rectifying over-allocated systems."
- The strategy does not commit to clawing back over-allocated groundwater systems.

4.2 Panel's views

The draft Strategy does not fully meet the requirements of a Water Plan in accordance with the National Water Initiative for the following reasons:

- None of the plans in the draft Strategy for maintaining and improving the health of individual rivers clearly identify the specific environmental assets (such as pools and

wetlands) to be protected. Victoria does have river health plans that identify these assets, and the Strategy should appropriately cross reference these plans

- The plans for the Latrobe, Thomson and Macalister, Maribyrnong and Werribee, and Moorabool rivers (all of which are currently over-allocated) do not set out a firm pathway for returning each river to environmentally sustainable levels of extraction, or indicate that substantial progress towards this goal will be made by 2010
- While some heritage rivers are identified, actions to protect and manage systems of high conservation value are not specified
- There is no evidence that the plans for maintaining and improving river health incorporate indigenous social, spiritual and customary objectives, or strategies for achieving these objectives
- There is no evidence that, in fully allocated systems, all interception activities (eg small catchment dams and plantations) above an agreed threshold will require a water access entitlement, and actions to address interception issues are not specified
- There is no clear process for reducing over-allocated groundwater systems to sustainable levels.

5 More efficient water use

The Panel endorses the draft Strategy's emphasis on maximising water efficiency and conservation efforts by all water users, but finds that the approaches for achieving more efficient water use need to be strengthened:

- Stronger incentives for efficient water use should be created for all water users, and for water authorities
- Water conservation targets should be extended to all regional urban centres
- Performance against all water conservation targets should be monitored, communicated, and used to guide implementation and adaptive management
- Mandatory water efficiency measures should be explored now, and should be considered as part of the adaptive management approach
- A rigorous monitoring and benchmarking program of all major components of water consumption in the Central Region (including industry, regional urban centres and irrigation) should be established, as a powerful tool for driving continuous improvement in water efficiency.

5.1 Submission views

There is widespread support for making conservation and water efficiency the highest priority, but widespread acknowledgement that the targets will be difficult to achieve. There is some support for mandatory water conservation measures to help achieve the targets.

Most submissions commented on the need for more incentives for water efficiency; to a large extent, suggestions involved the government providing subsidies or rebates (eg for water-efficient appliances). Where pricing was considered, submissions noted that water was undervalued and that pricing was a sound tool for providing signals about the need for water conservation. However, they also acknowledged the tension between increasing prices and protecting low-income households. In addition, several submissions noted that increasing prices would affect vulnerable businesses.

A significant number of submissions argued that the Strategy should place more emphasis on water efficiency by industrial, commercial and agricultural users, as there are opportunities for significant gains in these areas. Several submissions from non-domestic and industrial parties put the view that greater efficiencies would be achievable with the right incentives.

Many submissions noted that the concept of water trading is complementary to ensuring water is used most efficiently and for high-value uses. Some suggested specific options for explicitly linking water conservation targets, water business obligations, and the concept of water trading. There is enthusiasm for quickly developing these ideas as an adjunct to more conventional rebate schemes.

Box 5 – Submission comments on the draft Strategy's approach to achieving more efficient use of water

The following comments indicate the range of views expressed in submissions:

- Significant effort is required by Governments (both Federal and State), agencies and utilities to achieve the right policy and regulatory framework for significant improvements in water efficiency
- Pricing should be used to provide incentives for high water users (greater than 300L per person per day) to increase the efficiency of their use, and the price of water above this level should reflect the cost of recycled water (\$3/kL)
- Efficiency actions and policies for reducing water use should continue to be promoted as a priority program
- There is a lack of projects to address the efficiency of water use on-farm. Improving irrigation efficiency means not only increasing the yield of harvestable product per ML of water, but also increasing the value of production per ML
- Water conservation needs to be supported by a range of regulation and state/local incentive schemes due to the low price of water and large payback periods
- The Government should pursue mandatory water conservation programs with industry, as water savings measures are being implemented too slowly in this sector
- The Government should incorporate guidelines in planning schemes for rainwater tanks and third pipes, and mandate these measures where appropriate

Box 5 – Submission comments on the draft Strategy’s approach to achieving more efficient use of water (cont)

- The draft Strategy is weak in relation to conservation by commerce, industry, and agriculture. More ambitious savings targets and stronger price incentives are needed for industry and agriculture and major users of water
- There is a need for more aggressive pricing policies for high users, including a rising block tariff
- Water has been consistently undervalued by the community. More robust pricing tools would be a cost-effective way to promote water conservation, and pricing needs to be adjusted to reflect water’s real value before a market is initiated
- Water prices should be increased to a level where it is cost-effective for the public to conserve, and it will be impossible to achieve effective conservation and recycling until this done
- The incentive rebate schemes for domestic users may not be sufficient to achieve water savings. The Government should consider options such as land tax discounts to encourage property owners to upgrade, and mandatory minimum standards for water efficiency for appliances
- Water conservation is likely to be enhanced by a combination of education, incentives, effective pricing structures and trading mechanisms
- There is a role for regulation and legislation in implementing the strategy. However, mandating water efficiency needs to be considered carefully
- There is a need to encourage innovation in appliance design
- Water is too cheap. Further review of water pricing and regulation is required to encourage more responsible use of water. There is potential to link a water efficiency audit with the sale of property
- The Government should adopt a conservation incentive framework for the metropolitan water businesses to complement the water conservation targets and joint planning arrangements that are in place. This should be complemented by a trading arrangement which enables water businesses to bank or on-sell water savings
- Water retailers need incentives, including regulatory obligations, for meeting targets and also need to have flexibility about how they achieve targets – eg innovative and flexible pricing arrangements. Saving water is contrary to their dividend and profit requirements
- There is an immediate need to develop a program to manage against bounce back to higher levels of water use. Planning for 2006 to 2008 is a priority
- Water conservation targets should be extended to Rural Water Authorities
- Government should investigate setting minimum standards for showerheads, washing machines, and evaporative coolers. It should consider regulation of devices if voluntary efforts don’t deliver
- The public should be encouraged to compare water bills with previous ones to see if they are making progress in conserving water
- Regular monitoring and reporting of performance against water conservation targets is required to ensure they are being achieved, as targets are central to the strategy.

5.2 Panel's views

The Panel supports the draft Strategy's emphasis on conserving and using existing water supplies more efficiently, and the proposed water conservation target for Melbourne. However, a stronger approach for achieving this goal is needed.

5.2.1 Providing stronger incentives for efficient water use

The incentives and other approaches for achieving more efficient water use set out in the draft Strategy are not strong enough. For example, for Melbourne, the draft Strategy relies heavily on encouraging the use of more efficient showerheads and washing machines, and maintaining current lower consumption levels achieved through education campaigns and the imposition of water restrictions. Water use studies in Perth indicate that these approaches do not always generate the forecast water savings. For example, people can feel that using an efficient shower makes it acceptable to take longer showers, and the community's memory of droughts fades over time.

Stronger incentives for efficient water use should be created for all water users and water authorities. For domestic and industrial users, this should be achieved by ensuring that water prices reflect the full costs of supply, including externalities. For water authorities, this should be achieved by providing them with financial incentives to support their customers in meeting water efficiency targets and to explore innovations in water supply and management. Such incentives would counter the current disincentive for water authorities, which arise from the fact that the more water they sell, the higher their profits.

The Panel believes there are some attractive options for providing financial incentives to water authorities, such as incentives based on water allocation arrangements and linkages to the water efficiency targets. As a priority, an independent review should be undertaken to explore and evaluate these options.

5.2.2 Extending water conservation targets to all regional urban centres

The Panel analysed the forecast water consumption figures for 2055 set out in Chapter 7 of the draft Strategy, to determine whether they reflect sufficient improvement in water conservation. Its analysis indicates that between 2005 and 2055, Melbourne's water use per person is expected to fall by 21 per cent, reflecting water conservation targets, while Geelong's is expected to fall by only 5 per cent, and Ballarat's is expected to *increase* by 1 per cent (see Table 1 below).

Table 1 Water Consumption (L/head/day) for Melbourne, Geelong and Ballarat

L/head/day	Melbourne	Geelong	Ballarat
2005	368	412	428
2055	291	393*	432*
Difference (%)	- 21	- 5	+ 1

* Includes proposed water efficiency proposals presented in the draft Strategy
 Source: Panel's analysis using data provided in Chapter 7 of the draft Strategy

The Panel notes that if Geelong and Ballarat were to achieve the same improvement in water efficiency expected for Melbourne the water efficiency gains would be 5000 ML/annum for Geelong and 9000 ML/annum for Ballarat. As the combined total of all alternative supply options for Ballarat (including purchase of water entitlements from Cairn Curran Reservoir) is 17,900 ML/annum, such a gain would meet half of Ballarat's expected water needs in 2055.

Water conservation targets should be set for Ballarat, Geelong and the other regional centres. These targets should be at least 20 per cent less than current consumption by 2055.

5.2.3 Monitoring performance against conservation targets

To provide a basis for adaptive management and help ensure community support, performance against water conservation targets should be monitored, and published every second year. The relative performance of users, and the effectiveness of different initiatives in achieving conservation outcomes, should be measured and published.

This monitoring will provide early warning of likely failure to meet the targets, and thus allow the Government to consider making changes to its approach, and introducing stronger measures to encourage water conservation.

5.2.4 Exploring mandatory water efficiency measures

Mandating the use of water efficient appliances is an attractive option with the potential to increase the certainty of water efficiency outcomes and stimulate innovation in the design of water using appliances. The Panel believes this option should be explored now, and should be considered as part of the adaptive management approach.

5.2.5 Benchmarking to support and drive continuous improvement in water efficiency

A rigorous measurement and benchmarking program of all major components of water consumption in the Central Region (including Melbourne, regional urban centres, major water using industries and irrigation areas) should be established, and the results

published every three years. This would provide a powerful tool for achieving continuous improvement in water efficiency.

For Melbourne and the regional centres the following components of urban water consumption could be benchmarked:

- Domestic consumption in existing housing, including internal water consumption (toilets, dishwashers, showers, washing machines etc) and external water consumption (garden watering, swimming pools etc)
- Domestic consumption in new developments where greater substitution of recycled water and rainwater for potable water at the retail level is possible
- Large industrial water use (such as by breweries, paper mills, steel mills, oil refineries)
- Selected categories of commercial water use (such as by laundries, car washes)
- Public parks, gardens and sports grounds
- Non-revenue water (unmetered supplies and leakage).

Individual best practice benchmarks for each component could then be calculated and tracked over time, to support progressive improvement in water efficiency and define a path from the current level of consumption to best practice. The National Water Initiative requires development of national guidelines for customers' water accounts that provide information on their water use relative to equivalent households by 2006. The domestic best practice benchmarks could be included on water bills to provide an ambitious yet achievable goal in accordance with the National Water Initiative. An aggregate of best practice benchmarks for all components could provide a best practice benchmark for a whole city or regional centre.

For irrigation areas, benchmarking of water consumption could initially be undertaken in the Macalister Irrigation District, where the Government has invested in Total Channel Control. The dairy industry is the largest water user in the Macalister Irrigation District and records of milk production could be linked to water use to provide industry performance statistics without identifying individual irrigators.

The Panel notes that accurate end use data is essential for tracking the effectiveness of strategies designed to achieve the water conservation targets. Therefore it will be necessary to update measuring systems and databases so that each component of water consumption can be benchmarked effectively.

6 State planning policies

The Panel finds that the State's planning policies should be revised to complement the Sustainable Water Strategies, including taking account of the cost and availability of water and the cost of wastewater removal and treatment in approving urban subdivision.

6.1 Submission views

There is considerable support for planning controls to be used to manage population growth in areas of low water supply. Most municipalities suggested that planning controls should be strengthened. Several submissions also noted that planning controls might be appropriate in areas of peri-urban development where proliferation of small catchment dams is having a significant impact on streamflows.

There is a strong opposition to unfettered population growth without responsibility for providing new sources of water.

Box 6 – Submission comments on State planning policies

The following comments indicate the range of views expressed in submissions on State planning policies:

- Clearer direction should be provided in the State's planning framework and building regulations on how to achieve water conservation at the time of new and re-developments
- The strategy ignores the question of how sustainable our population growth is. Why are we still promoting population growth in areas that are already running out of water?
- Planning laws that take into account the economic availability of water and the cost of wastewater removal and treatment are required
- Planning needs to take into account the impact on other users and downstream users when consideration is given to new developments
- Planning powers should be used to keep high water using industries out of Melbourne.

6.2 Panel's views

The Government should consider using its planning powers to influence population growth in areas where water supply is limited. The final Strategy should include a commitment to revise Victoria's Planning Policies to provide clear direction to responsible authorities in respect of water use and availability, and rural and urban subdivisions (including provision for water-sensitive urban design and the impact of small catchment dams).

7 Strategic planning for water-sensitive urban development

The Panel finds that:

- A metropolitan-wide study of water and sewer networks should be undertaken to identify areas where the cost of development using conventional systems is high and water-sensitive urban development is potentially economic
- An evaluation of existing water-sensitive urban developments should be undertaken to identify more cost-effective and sustainable designs and support adaptive management
- Potential locations for stormwater storages should be identified ahead of urban development, so that land can be put aside for this purpose
- Current institutional and regulatory arrangements are inhibiting the use of the stormwater resource and should be included in a wider review of the arrangements governing water-sensitive urban development.

7.1 Submission views

The Panel notes that the draft Strategy addresses the issue of harvesting stormwater, but does not address the broader issue of water-sensitive urban development. Therefore it is not surprising that relatively few submissions commented on water-sensitive urban development. However, a number of submissions from local government and water organisations did support the ongoing exploration of water-sensitive urban development, and one from a consulting organisation raised the issue of developing nodal sewerage systems to increase the opportunities for local water recycling.

Several submissions also specifically raised the issue of stormwater, including in the context of local government's role in water planning. A number of submissions commented on the need to clarify the arrangements for stormwater, including who is responsible, and the definition and allocation of stormwater.

Box 7 – Submission comments on water-sensitive urban development and related issues

The following comments indicate the range of views expressed in submissions:

- The roles of Local Government and the State Government in relation to local stormwater are confused and should be clarified as an immediate priority (for example, by developing a State-wide Urban Stormwater Strategy)
- Some Water Authorities would like Local Government to be responsible for stormwater
- Local Government seeks the right to allocate stormwater
- Water trading in stormwater should be considered

Box 7 – Submission comments on water-sensitive urban development and related issues (cont)

- More research into the availability, storage, supply and distribution of stormwater is needed
- More research is required into the role of water-sensitive urban development
- A working group consisting of representatives from the water industry, the development industry and DSE should be established to explore local recycling in green-fields developments
- The assessment and risk diversification of distributed (water sensitive) systems need further examination
- The Government should further investigate water-sensitive urban design measures and establish minimum standards for new developments
- It is not clear that water-sensitive urban developments can effectively help streams
- Areas for water-sensitive urban development should be identified and applied through Local Government planning
- A decentralised approach to sewage treatment to service the northern suburbs should be adopted.

7.2 Panel's views

Innovation in the design of water services (water supply, sanitation with or without water and stormwater) for urban developments will be important for achieving the Strategy's objectives. Such water-sensitive developments include collection, treatment and supply of recycled water and stormwater for non-potable uses within large urban developments, and integration of water-efficient houses into the design of water supply, sanitation and stormwater systems

The costs of transporting water from the water supply head works to individual subdivisions and transporting sewage to the two major sewerage treatment plants varies widely across the Melbourne metropolitan area. These costs should be mapped, and the areas where water-sensitive urban developments could be attractive should be identified.

Rigorous evaluation of existing water-sensitive urban developments, which are in effect experiments, should be undertaken. The lessons learnt could then be used to develop more cost-effective and sustainable designs that could be included in large-scale scenario planning for the water supply, sewerage and stormwater networks. The evaluation of existing 'icon-water sensitive urban developments' is a requirement of the National Water Initiative.

The Government will need to make a strategic decision in the relatively near future about whether Melbourne should continue with a highly centralised sewerage network, or move to a nodal system of sewage treatment that facilitates local, more energy-efficient water recycling. Potential locations for stormwater storages, including disused quarries, should be identified ahead of urban development, so that land can be put aside for this purpose. (Canberra provides an example of how stormwater storages can be integrated into urban landscapes.) Similar work should be undertaken in the regional centres.

Experience in implementing water-sensitive urban developments has demonstrated that the institutional and regulatory arrangements applying to such developments are a major barrier to innovation, and should be reviewed. Such a review is consistent with the requirements of the urban water reform agenda of the National Water Initiative.

8 Water trading

The Panel believes that water trading within the Central Region and with other regions is an important strategy for proceeding, and finds that:

- There is an urgent need to undertake a study to clarify how water trading will operate in the Central Region
- Water trading into or out of the Central Region should be explored and considered as part of the adaptive management approach.

The Panel's findings reflect the support for water trading as well as the strong need to better understand the details of trading operations and outcomes, raised in submissions.

8.1 Submission views

There is strong support for trading as set out in the draft Strategy. However, some submissions opposed trading, and many urged caution in moving from the concept to detailed implementation. There is an obvious need to undertake work on the detailed implications of trading and the effect on individual businesses and users. Several submissions expressed disappointment that trading with Northern Victoria was not considered in the Strategy.

Box 8 – Submission comments on water trading

The following comments indicate the range of views expressed in submissions on water trading:

- Melbourne Water and Southern Rural Water (SRW) should be charged with facilitating trading of water for commercial and irrigation use in the Yarra Valley for surface and ground water respectively
- An integrated water entitlements project is needed to ensure optimum understanding of changes to water entitlements and their use/trading
- Permanent trading must be allowed if significant volumes of water are to move to higher value uses; this is because producers wishing to invest in high-value enterprises require certainty, and temporary trading wont deliver sufficient certainty
- Care is needed in setting up entitlements and a trading scheme. For example, if initial entitlements are larger than necessary to encourage trading this may provide temporary disincentives for water conservation

Box 8 – Submission comments on water trading (cont)

- The economic simplicity of water trading allocation mechanisms may be attractive. However, further detailed analysis and consideration of the social and economic consequences for individual businesses, communities and industries need to be undertaken
- It is not clear exactly how water markets may impact on operations
- The approach that moving water from low-value to high-value users is best left to the market aided by effective water trading mechanisms is supported. Melbourne Water and SRW should be charged with facilitating trading of water for commercial and irrigation use in Yarra Valley
- Trading would be facilitated by assigning bulk water entitlements and capacity shares to retail water companies - total consumptive entitlement would not be allocated. Partial allocation and trading would complement water conservation incentive framework
- The economic simplicity of water trading allocation mechanisms may be attractive. However, further detailed analysis and consideration of the social and economic consequences for individual businesses, communities and industries etc need to be undertaken
- It is disappointing that the draft Strategy does not discuss trading between the Central Region and Northern Victoria.

8.2 Panel's views

Water trading will provide the flexibility needed for future management of the water supply in the region. However, the Panel considers that both permanent and temporary water trading in the Central Region are far more complex than trading of irrigation water entitlements in Northern Victoria. Therefore, it believes a study of water trading in the context of the Central Region should be undertaken, to enable the detailed design of an appropriate water market.

The study should include defining who can participate in the market, and whether the market will be 'deep enough' to be effective. It should also consider permanent and temporary water trading with parties outside the Central Region. The study would help all parties understand the expected outcomes from water trading and therefore provide better information to address concerns about inequities and perverse outcomes.

9 Rigorous decision-making based on a wider range of options

The Panel finds that:

- It is prudent for Government to develop a diverse portfolio of options for new sources of water and augmentations and interconnections. When selecting between alternatives, it is desirable to assess a variety of options rather than focus on a single iconic project
- There is a need to develop improved tools for assessing the technical, economic, environmental and social effects of each short and long term options on a risk-adjusted basis option
- For Melbourne, these options should include desalination, indirect potable recycling, pumping of stormwater at Dights Falls and trading water with the irrigation community north of the Divide
- For Ballarat, Geelong and other regions, they should include the options identified in the draft Strategy
- A study of an interconnected water supply system servicing the Central Region should be undertaken to better understand the potential advantages of an interconnected system during prolonged droughts.

9.1 Submission views

In relation to decision-making, many submissions raised the need for standard analysis frameworks and approaches – for example, around triple bottom line and techniques that more rigorously take account of social, economic and other factors. There is a strong desire for transparency, and the use of public “trigger points” for commitment to options.

While the draft Strategy evaluates options, some submissions were critical of the extent to which greenhouse effects have been considered. Some noted the lack of consistency in relation to the assessment of greenhouse gas emissions associated with some major projects, including the Eastern Water Recycling Proposal and other piping options. One submission argued that each major project should be required to mitigate any additional greenhouse gas increases rather than rely on predicted future savings from water conservation as an offset.

In relation to specific options, the submissions expressed strong views on new dams, recycling, interconnections, desalination, and the Eastern Water Recycling Proposal:

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- Many supported the policy of no new dams. However, a few suggested that new dams would provide greater flexibility. A number also suggested that the size of current dams should be increased (by raising of dam walls)
 - Several supported the use of recycled water for potable use in the future. Others drew attention to the public health implications and occupational health and safety aspects of this option. Others supported the use of recycled water for agricultural use, and noted that there is already strong demand for recycled water for this purpose in the Geelong area and from the Western Treatment Plant
 - Some noted that interconnection with the North should be explored in the Strategy, particularly as a long-term option. However, other submissions from parties involved in agriculture opposed this view on the basis of the loss of value of production
 - Several were critical of inter-basin transfers particularly for Ballarat [Cairn Curran] and Geelong [Melbourne], while others, including some from water authorities, supported the flexibility provided in managing supplies through inter-basin transfers
 - Several submissions noted that the impact on river health must be taken into account in inter-basin transfers
 - Views on desalination were mixed although several supported it, noting that the cost of desalination is coming down which should make it more attractive in the future
 - Only a few were specifically in favour of the Eastern Water Recycling Proposal, while some put the view that there is no justification for going ahead with this proposal

Many submissions also commented on local options such as another dam in the Otways, better harvesting of flood events when they occur, use of local groundwater resources and many options for Gippsland. A few submissions noted that the draft Strategy does not take into account the significant impact of wildfire on the sustainable yield of water catchments, and that fire protection should be considered an important option to protect and enhance water supplies.

Box 9 – Submission comments on the options and approach to decision-making

The following comments indicate the range of views expressed in submissions:

- It would be useful to have a clear and transparent trigger point for going ahead with options that is understood by the community
- “Best practice” standards for future assessment of options are needed to ensure decisions are robust and accepted by the community
- The Government (in conjunction with DTF and ESC) needs to establish generic financial criteria for inclusion of environmental and social externalities in the financial assessment of options
- The feasibility study of harvesting water from the Newlingrook aquifer should be overseen by DSE

Box 9 – Submission comments on the options and approach to decision-making (cont)

- The very real risk posed by bushfire within Melbourne’s water catchments should be addressed
- Interconnection with North should be explored
- “Transfer of water savings to other supply systems may represent lost opportunities for additional water in the Loddon River to be used for environmental purposes”
- There are some doubts over Cairn Curran’s ability to supply quality water for Ballarat
- The cost of recycled water is coming down which should generate more useable water in the future
- The use of recycled water from Melbourne for agricultural use in Gippsland is supported
- More research is needed on the contamination risks posed by the use of recycled water in agriculture
- Agricultural users in the Geelong area should have access to recycled water, including from the Western Treatment Plant
- The main issues with recycled water are security, reliability, quality and price
- The EWRP is not supported on the basis of energy considerations and reliance on coal fired power plants maintaining existing levels of water consumption
- Indirect potable use of recycled water is supported
- The cost of treating recycled water should be met by the urban water users [polluter pays] and not by the users of the recycled water
- The Eastern Treatment Plant should be upgraded
- Interconnection can be seen as encouraging further concentration of the population in cities
- A detailed examination of potential water storage sites (for new dams) should be undertaken
- More storage would give a greater ability to capture and store peak flows in severe rain events.

9.2 Panel’s views

The Central Region’s water resource is already one of the most variable in the world. Climate change, growing populations and changing demographics are increasing the uncertainties, and placing new pressures on this resource. In addition, the proposed cap on river water diversions may limit these diversions to sustainable levels. Conserving and using water more efficiently will not be sufficient on its own to achieve a long-term balance between supply and demand for water in the Region, and new non-traditional sources of water will need to be tapped. Desalination and recycling provide more reliable sources of water than river flows in an uncertain climate, so must be considered.

The draft Strategy commits to an adaptive management approach to decision-making and to developing a diverse portfolio of options for new sources of water and augmentations and interconnections. This is a sensible and essential response for managing the increasing uncertainty.

However, hasty decisions based on incomplete analysis or poor implementation of adaptive management poses significant risks, in the form of wasted investment, lack of

community support and adverse water resource and environmental outcomes. To help manage these risks, the Panel believes:

- A decision-making tool should be developed to support comparison and selection of short and long term options on a risk-adjusted basis
- A wider range of options should be rigorously evaluated before any major decisions are made
- A study of an interconnected water system servicing the Central Region should be undertaken to understand the potential advantages of interconnection during prolonged droughts.

9.2.1 Develop a more sophisticated risk-based decision-making tool

The Panel supports the draft Strategy's commitment to developing a diverse portfolio of options for new sources of water and augmentations and interconnections. The costs of the rigorous planning and evaluation involved in building such a portfolio are small in proportion to the capital and operating costs of building complex water projects. In addition, such a portfolio will enable the Government to select the most cost-effective and sustainable option when additional water is needed and implement it in a timely manner, while avoiding premature investment.

The Panel notes that there is a high level of uncertainty about many of the identified options. In other industry sectors, such as electricity and gas, where there is high uncertainty, planning and investment decisions are often supported by tools which explicitly allow the risks of projects to be assessed and factored in, such as real options analysis.¹

The Panel considers there is an opportunity for Victoria to lead the way on adaptive management supported by such tools. It also considers that attempting to compare and decide on options without a framework for assessing projects on a risk-adjusted basis would be flawed. Therefore, it recommends that the final Strategy commits to a staged work program to develop and implement an appropriate decision-making tool.

9.2.2 Rigorously evaluate a wider range of options

The Panel is concerned that to date, only one option – the Eastern Water Recycling Proposal – has been developed in any detail. A wider range of options for Melbourne, Ballarat and Geelong should be rigorously evaluated over the next three years, before

¹ The real options approach has been designed for projects where it is likely that further information will become available in the future to better evaluate the project; the project or some of its components can be deferred; and there are adjustment costs in reversing the project or its components.

any major decisions are made. This evaluation should include the greenhouse gas emissions associated with each option. The Panel notes that even under the highest climate change scenario presented in the draft Strategy, Melbourne has until 2016, Ballarat until 2011, and Geelong until 2017 before more water is required. Thus there is time to complete these evaluations.

The consequences of wildfire regenerating the mature mountain ash forest in Melbourne's water supply catchments must be taken into consideration in the Strategy. An extensive wildfire would halve the volume of water available to Melbourne within a decade. Higher temperatures and more frequent droughts resulting from climate change increase the risk of such wildfires.

The Panel notes that Melbourne has sufficient storage capacity in its existing dams; the issue is getting more water into them in the future, not building more of them. The water will have to come from a diverse range of potential sources such as desalination, recycling and stormwater. Longer rotations for timber harvesting in the Thomson and Yarra Tributary catchments creating older forests would produce useful increases in streamflow. Given that there is a cap on river diversions in the Yarra, Thomson and Murray Darling River Basins, the greatest potential source of river water is to trade with the irrigation community north of the Divide.

At least four additional options for Melbourne should be evaluated with the same rigour as the Eastern Water Recycling Proposal. These options include:

- **A desalination plant fuelled by renewable energy.** Desalination presents an opportunity to provide reliable water supplies even in the most extreme droughts. Rapid advances are being made in desalination technology, reducing the costs and energy use of this option. Combining desalination with renewable energy would be the ultimate solution. The Western Treatment Plant at Werribee provides Melbourne with a unique opportunity to explore this option, due to the availability of methane, large areas of land, and nutrient-rich water for growing biofuels.
- **Indirect potable recycling.** This option would also provide reliable water supplies during extreme droughts. It should be thoroughly evaluated, and a long-term program of community engagement should be initiated immediately to prepare the community if this option is selected in the future. The Panel supports the current review of trade waste policies, as the quality of the effluent will have a significant impact on the complexity and cost of water treatment.
- **Pumping of stormwater at Dights Falls.** Some 600,000 to 700,000 ML of water flows over Dights Falls in an average year. This substantial volume of water includes a considerable amount of stormwater runoff from the metropolitan area of Melbourne. The Falls are only 30 km from Yan Yean Reservoir, to which water could be pumped and treated to potable standard. This option, and possibly alternative large-scale options for stormwater harvesting, should be investigated to assess cost

effectiveness and sustainability. A thorough environmental study should be undertaken to define the environmental water needs of the river and estuary downstream of the Falls as part of the investigation.

- **Water trading north of the Divide.** Irrigation accounts for 77 per cent of Victoria's water use and Melbourne accounts for 8 per cent. A relatively small volume of water traded from the north could potentially avoid billion of dollars in expenditure and highly energy-intensive desalination and recycling schemes. In addition, the irrigation infrastructure is starved of funds, particularly the on going revenue required to operate world-class irrigation systems that are necessary to keep Victoria's irrigators competitive in a global market. An objective evaluation of this option could potentially identify a win-win solution for both irrigators and Melbourne.

In relation to Greater Ballarat, the Panel considers that the Cairn Curran option looks promising, and supports the idea of freeing up additional water through the reduction of losses and trading. However, much more work is needed to establish whether this option is viable. For example, its costs, infrastructure requirements, environmental consequences and practical arrangements need to be thoroughly examined.

In relation to Greater Geelong, the Panel supports the proposal to undertake a detailed feasibility study of the Newlingrook option (including a thorough groundwater analysis, identification of all connections between ground and surface water, identification of potential works such as the locations of borefields and pipelines, and consideration of the possibility that urban communities in the South West may also need to use the Newlingrook resource if predicted changes in rainfall and runoff take place). The Panel also considers that a second option for the Geelong region should be developed, in case Newlingrook is found to be unviable.

9.2.3 Undertake a study of an interconnected regional system

Interconnection of the region's water supply systems has the potential to provide new supply and management options to some systems, and to increase the overall robustness of the whole system. It could improve the Region's ability to cope with water crises, by creating more flexibility and spreading the risks associated with drought across the whole Region.

The Panel believes a study of an interconnected water supply system servicing the Central Region should be undertaken to better understand the potential advantages of interconnection during prolonged droughts.

10 Institutional accountability and resources

The Panel finds that a single organisation with appropriate resources and technical capability should be given the mandate and be held accountable for:

- Coordinating and managing the implementation of the detailed actions associated with the Strategy
- Improving the information and knowledge base required to effect proper adaptive management and implementation
- Annually reporting progress to the Minister and public.

10.1 Submission views

In general, submissions did not address implementation issues. However, the few that did delivered a strong message about the lack of detail on implementation, the importance of having detailed and clear accountabilities for specific actions, and the need for accountabilities to be matched by resources, funds and capacity.

Submissions noted that the Strategy quickly needs to be translated into a well-coordinated implementation, monitoring and review program. The concept of a 'living plan' is supported. Submissions also recognised that the Government has the prime role in ensuring monitoring occurs against the targets and performance indicators, and that the Government should expect to see information on whether outputs are delivered.

Box 10 - Submission comments on institutional arrangements

Comments on institutional arrangements and related issues included the following:

- Significant work is required to achieve the right policy and regulatory framework to support significant improvements in water efficiency
- Strong coordination is required in managing the state's water resources – across regions (that is, state-wide) and between the multitude of stakeholders
- Defining detailed accountabilities and timelines for monitoring, adapting and formally reviewing implementation of the strategy and tracking progress on options is critical to the success of the strategy. The draft Strategy does not sufficiently discuss the governance arrangements, accountabilities, roles and responsibilities. It is unclear who will deliver the proposed actions, in what timeframe, and with what resource implications. The Government should make it a high priority to identify responsibility and timeframes for proposed actions and resource implications; stakeholders need to be involved in this to ensure well-grounded with responsibilities appropriately assigned, resourced and sequenced
- "Critical to achieving support for the finalisation and implementation of the strategy will be the ability of the State Government to clearly articulate the respective roles, responsibilities and resourcing needs and capacities of the various implementation agencies, including local government, water, sewerage and drainage authorities, government departments and agencies, and Catchment Authorities."

Box 10 - Submission comments on institutional arrangements (cont)

- Sufficient funding, staffing, training will be needed to support shared responsibility. In addition, resources, opportunities for knowledge sharing and capacity building will be needed to underpin actions
- Need to clarify institutional arrangements for providing stormwater to customers as an alternative water source (local government role)
- Need to undertake necessary legislative reviews to ensure that market arrangements and institutional frameworks provide for water conservation and efficiency (eg building codes)
- Need to lock-in an evaluation program - to review veracity of assumptions made compared to actual outcomes, and assess technological developments etc. Ongoing monitoring of the success of water conservation programs is required, as is a process for measuring, monitoring and reporting on the implementation and the success of the Strategy in achieving its objectives. This could include audits of key components
- The Strategy needs to provide more detail on adaptive management approach, monitoring and review
- In relation to trade waste, the roles of regulators, government departments, agencies and water businesses in setting prices and acceptance parameters need to be clarified. Responsibility for scrutinising and resolving conflicts should be allocated to a single independent authority
- Public/private service delivery model can deliver the objectives of the strategy in relation to recycled water through innovative commercial structures and engineering which are not the core competencies of government water utilities. A separate Government entity should be created, with a mandate to compete with water utilities in the potable water markets using recycled water. Such a model would successfully draw on private sector expertise and innovation
- Need to clarify responsibility for Environmental Water Reserve reporting
- "The uncertainties and risks demand a rigorous plan for monitoring and annual reporting of performance."

10.2 Panel's views

A single organisation needs to be given a mandate and be held accountable for coordinating the implementation of actions in the Strategy, improving the information base required to adaptively manage this implementation, and annually reporting on progress to the Minister and the public. This role requires dedicated personnel with appropriate technical skills, information, tools and models.

Many water authorities, departments and private parties will be involved in delivering the Strategy. However, ongoing coordination of activities and information will be required for the Strategy to be effective. The proposed adaptive management style of implementation is highly appropriate and will bring about significant benefits if properly applied. However, adaptive management is information and analytically intensive and increases the need for a single point of accountability for this implementation.

Specifically, the Panel considers that the actions that require central coordination include:

- Water accounting
- Water measurement
- Development of best-practice water consumption benchmarks and water conservation targets
- Measurement of progress against these benchmarks and targets
- Detailed investigation of water trading
- Strategic planning of water supply and sewer networks, evaluation and improvement of water sensitive urban designs, and integration with town planning
- Detailed investigation of a diverse portfolio of options for augmentation, interconnection and new sources of water
- Medium-term water supply outlook based on climatic data.

The Panel believes there are significant advantages in allocating responsibility to a single organisation to coordinate and undertake these activities. This organisation must be appropriately resourced and have the necessary technical capability. At a minimum, it recommends that this role be separated from the policy role.

11 Community engagement and water literacy

The Panel finds that a strategy should be developed for ongoing engagement of the community and increasing water literacy.

11.1 Submission views

Many submissions highlighted the importance of increased community engagement in implementing the Strategy, as many elements rely on significant behavioural changes in the community. A community engagement strategy should use a range of tools, including high-level awareness campaigns, school and community general education programs and targeted local engagement activities.

Some submissions noted that, if indirect potable reuse was to be required in the long term, information programs to improve acceptability should commence now.

Box 11 – Submission comments on community engagement and water literacy

The following points indicate the range of views on community engagement and water literacy provided in submissions:

- Increasing water literacy within the community will be a key factor in the success of the strategy
- Educating the community is important to the success of the strategy. The Government needs to support its investments with a significant public education program
- Water literacy should include stormwater
- “There should be a clear and real effort to involve the community in development of actions rather than a notional community representative on committees to provide for community comment.”

11.2 Panel’s views

The Panel notes that there was much better engagement in the consultation process in regional areas than in metropolitan Melbourne. Implementation of the Strategy will rely heavily on maintaining and enhancing the current voluntary commitment to water conservation. This cannot be taken for granted as implementation measures will require significant behavioural change.

12 Socio-economic impact of the strategy

The Panel finds that the implementation plan should explicitly provide for analysis of its socio-economic impacts on primary and secondary industries, and on low-income domestic users.

12.1 Submission views

Several submissions from industry groups commented on the impact of various options on a particular industry, and suggested initiatives that would support the objectives of the Strategy. In particular, the earth resources industries were concerned about the impact of stormwater and groundwater initiatives on the viability of their enterprises. A number of submissions commented on the implications for forestry. While some parties supported a ban on logging in all catchments, others felt that the draft Strategy treated forest industries unfairly and singled out plantation forestry as a land use that intercepted catchment flows.

Some submissions argued that the draft Strategy does not adequately cover agriculture's future needs for water, and that there should be less emphasis on environmental needs

of waterways and more on maintaining and enhancing the provision of water for agriculture.

The energy industry submitted that its entitlements to water were strongly held and should be maintained.

Several submissions put the view that the impact on low-income families should be taken into account in developing tools to enhance conservation and water use efficiency. In addition, the socio-economic impact of water trading on rural irrigation communities should be considered.

Box 12 – Submission comments on socio-economic impacts

The following comments indicate the range of views expressed in submissions on socio-economic impacts:

- There should be state-wide equality in pricing
- The inclining block price structure is not fair for industry and large water users
- Forests are not fairly treated in the strategy
- Water use of plantations needs further study
- The results of White Paper actions 2.20 and 2.21 need to be completed before further decisions are made on forests
- The strategy does not sufficiently acknowledge the importance of water in Gippsland for agribusiness needs
- The strategy focuses too much on residential urban needs and not enough on agriculture and industry
- The strategy does not examine how to provide additional water to maintain production and viability of irrigation communities
- There is no mention of adequate water to maintain the dairy, beef and horticultural industries in the Region
- There is a need for a study of stressed irrigation communities
- The strategy shows a reduction of 81 GL in water for agriculture in the next 50 years, which will devastate many areas
- There is no information on the socio-economic impact on diverting water to environmental flows
- "The capacity to act (on water conservation) varies among households, with many disadvantaged households having little scope to change water consumption patterns."

12.2 Panel's views

The Panel notes that the Sustainability Assessment attempts to take into account socio-economic impact of various proposals and options. More detailed examination of impacts on individual industries and sections of the community should be required as the implementation plan is actioned.

13 Effectiveness of the consultation process

The Panel finds that the consultation process was comprehensive, but had the following shortcomings:

- The general population of Melbourne was not highly engaged
- Apart from poorly attended public forums, there was little opportunity for community education through discussion of issues.

13.1 Submission views

There was general appreciation of the opportunity to participate in the consultation process.

Two submissions noted that the draft Strategy did not fulfil the requirements of the Water Act in that a Sustainable Water Strategy should contain an Implementation Plan for consultation.

Many submissions welcomed the opportunity to comment of the draft Strategy and commended the Government for providing this opportunity. Only a few submissions were cynical about the consultation process.

Box 13 – Submission comments on the consultation process and scope of draft Strategy

The following comments indicate the range of comments expressed in submissions on the consultation process and the scope of the draft Strategy:

- The draft Strategy did not include an implementation plan and this is a matter of significant concern
- The draft Strategy is an excellent reference point outlining a range of planning options and information on water use, management and investment
- The long term view of water resource management in development of the draft Strategy is commended
- The draft Strategy provides a coherent assessment and plan of action to address future water needs across the region

13.2 Panel's views

The consultation process was designed to maximise public discussion of the Strategy. It included regional public forums organised by local government in many urban and regional localities, as well as forums for specific stakeholder groups. In addition, a Consultative Committee took part in the development of the draft Strategy. Water authorities, catchment management authorities and local government played a significant part in ensuring that their communities were informed of the process.

A total 432 submissions were received; they comprised 195 short submission forms, 68 full submission forms and 169 free form submissions. The Panel read all the submissions and the detailed analysis of them that the Department of Sustainability and Environment undertook. Panel members also attended most of the public forums.

The Panel was impressed by number and quality of submissions. Clearly, individuals, community groups, authorities and other stakeholders spent significant time on reviewing the draft Strategy and formulating their comments. Many good and detailed ideas were put forward and the Panel recommends that the Department of Sustainability and Environment take these into account in finalising the Strategy and putting the Implementation Plan into action.

The Panel noted that, per capita, there was much deeper engagement with rural and regional communities compared with metropolitan Melbourne. More time and different approaches may be required in future community engagement in Melbourne. For example, it may be useful to engage the many community networks over a longer period of time.

Attachment 1

Independent Panel's assessment of the Draft Strategy's compliance with the requirements for Water Plans under the National Water Initiative Intergovernmental Agreement

Issue	IGA Requirements for Water Plans	Comment
	Key Element	
Statutory water plans	Statutory water plans for surface and groundwater management units in which entitlements are issued involving judgements informed by best available science, socio-economic analysis and community input	Conforms as a statutory based surface water plan Good science input and good community input Limited socio-economic assessment
Environmental outcomes	Plans will secure ecological outcomes by describing the environmental and other public benefit outcomes for water systems and defining appropriate water management arrangements to achieve those outcomes	Describes outcomes reasonably well, with good general discussion for each river However, there is no direct list of ecological assets. The Panel understands this information is in CMA River Health Plans, and considers it should be formally incorporated into the Strategy Provides aggregate volumes and broad principles, plus some details on flow regimes in Appendix 3.
Restoration	Implement firm pathways and open processes for returning previously over allocated and/or overdrawn surface and groundwater systems to environmentally sustainable levels of extraction. Make substantial progress by 2010 towards adjusting over-allocated and/or overused systems	Assumes the various Environmental Flow reports do establish a valid sustainable levels of extraction. Yarra, Barwon & Gellibrand requirements met. Others are not achieved, although progress has been made towards meeting the requirements of the Werribee, Maribyrnong, Thompson and Moorabool Rivers Sustainable levels have yet to be determined for the Tarago and Latrobe rivers. There is no pathway evident for completing these determinations or for making substantial progress by 2010 Although there is a proposal to complete groundwater management plans, there is nothing on actions to restore over allocated groundwater systems, although some are identified
Resource security	Provide resource security outcomes by determining the shares in the consumptive pool and the rules to allocate water during life of plan	Achieved

Issue	IGA Requirements for Water Plans	Comment
Adaptive management	Factor in knowledge improvements and provide regular public reports	Achieved
High conservation value	Identify surface and groundwater systems of high conservation value, and manage these systems to protect and enhance those values	Some Heritage Rivers identified, but not clear what management is in place to protect. Panel understands that details are in CMA Regional River Health Strategies To National Water Initiative compliant, action to protect and manage systems of high conservation value should be included in final Strategy
Indigenous interests	Water plans will incorporate indigenous social, spiritual and customary objectives and strategies for achieving these objectives	Absent
Interception	Farm dams and bores; intercepting and storing of overland flows; and large-scale plantation forestry.	Not treated adequately. Panel notes there is a commitment in the Water White paper to include all forms of interception in the water accounting system. The final Strategy must include action to address all forms of interception
Fully allocated systems	In fully allocated systems significant interception activities should be recorded (for example, through a licensing system); any proposals for additional interception activities above an agreed threshold size, will require a water access entitlement	Proposed water accounting system will record interception activities. Licensing regime for additional interception activities above the threshold not achieved
	Threshold size will be determined for the entire water system covered by a water plan, having regard to regional circumstances and taking account of both the positive and negative impacts of water interception on regional natural resource management outcomes (for example, the control of rising water tables by plantations); and a robust compliance monitoring regime will be implemented.	Not addressed in draft Strategy. Although a major study is being undertaken to identify high impact zones in respect of plantations, action to address interception issues need to be in the final Strategy to be NWI compliant No compliance monitoring described
Not fully allocated	In water systems that are not yet fully allocated, significant interception activities should be identified and estimates made of the amount of water likely to be intercepted by those activities.	Most river systems are over-allocated; some groundwater systems are not fully allocated. Proposed water accounting system should include scientifically robust estimates of sustainable yield and water likely to be intercepted

Attachment 2 Assessment of Draft Sustainable Water Strategy Central Region against requirements of the *Water (Resource Management) Act 2005*

Section	Requirement	Assessment
22 C [1] (a)	To identify threats to the reliability of supply and quality of water for both environmental and consumptive uses in the region	Draft Strategy lists threats as population growth, economic growth, land use changes and climate change. Small catchment dams receive attention, particularly in the Maribyrnong and Barwon systems and to a lesser extent in the Moorabool system.
S 22 C [1] (b)	To identify ways to improve and set priorities for improving the reliability of supply and quality of water, including managing demand for water, and investing in infrastructure for the supply of recycled water	Draft Strategy identifies ways for improving reliability of supply, including water conservation and efficiency targets and the interconnection of supply systems. Mentions reuse of wastewater, but this option still in the study stage, and there is little focus on using treated wastewater for potable purposes. Does not specifically identify priorities for improving reliability of supply and quality, but the tools for developing them are covered in chapter 8.
S22 C [1] (c)	To identify ways to improve and set priorities for improving the maintenance of the environmental water reserve in accordance with the environmental water reserve objective	Chapter 6 sets out a reasonably detailed set of options and management proposals for maintaining, improving, monitoring the EWR for each of the rivers.
S 22 C [1] (d)	To identify ways to increase and set priorities for increasing the volume of water in the environmental water reserve to improve the environmental values and health of water ecosystems	Draft Strategy proposes the establishment of an EWR for each river in the region and sets out target in chapter 6. Also puts forward a variety of methods for achieving some improvement to environmental values and the health of water ecosystems.
S 22 C [1] (e)	Include an implementation plan, setting out timelines or targets for implementing key actions identified by the strategy	Chapter 8 discusses a range of means for achieving many of the plans in the strategy Some targets are included, some yet to be developed but it seems a lot of time lines are yet to be settled.