

5 August 1999

Mr Ian Dundas
Committee Secretary
House of Representatives
Standing Committee on Environment and Heritage
Parliament House
Canberra ACT 2600

Dear Mr Dundas

INQUIRY INTO CATCHMENT MANAGEMENT

Please find attached Melbourne Water's submission to the above inquiry. I apologise for it being a few days late and hope this does not inconvenience you. An electronic version of the submission has already been emailed to you for convenience.

The challenges in catchment management are considerable, and the Committee is to be commended on its initiative in undertaking this inquiry.

Melbourne Water's submission focuses on the Commonwealth's role in catchment management and provides practical examples of where Melbourne Water is adopting a catchment management approach to deliver superior environmental outputs.

I have attached for your information several documents which provide greater detail on Melbourne Water's approach to catchment management related issues 'Catchment to Coast – Making the Connections in the Urban Water Cycle', 'Annual Stream Health Monitoring Report 1997' and the 'Annual Environment and Public Health Report 1997/98'. Further copies are available if you would find them useful.

We would be happy to provide more elaboration on any of the points raised in our submission, or any other advice or assistance the Committee may require.

Please contact Mr Nick Ronan, Manager, Strategic Planning in our Waterways and Drainage Group if you require any further assistance. Nick's telephone number is (03) 9235 2101, and his other contact details are given as an end-note to the submission.

Yours sincerely

[signed]
ROSS YOUNG
A/MANAGING DIRECTOR



Submission to
Inquiry into Catchment Management

**House of Representatives Standing Committee
On Environment and Heritage**

July 1999

SUMMARY

Melbourne Water is a statutory corporation wholly owned by the Government of Victoria. Melbourne Water provides wholesale water supply and sewerage services to the three retail water companies and manages waterways and major drainage systems within the Port Phillip and Western Port catchments.

Melbourne Water's submission to the inquiry is based on over a hundred years of experience dealing with most elements of the water cycle within a catchment management framework. The particular functions that Melbourne Water manages on an integrated water cycle basis are:

- Water supply for Melbourne, including catchment management, harvesting, storage, limited treatment, and distribution to three retail water companies.
- Bulk transfer, treatment and disposal of the majority of Melbourne's sewage, which is collected by the retail water companies.
- Regional drainage, flood plain management, flood mitigation, waterway management and water quality management in urban and rural waterways.

The following points summarise the key points contained in this submission.

- A catchment based and holistic approach to land and water resources management is required to ensure that sustainable use of the nation's water resources is obtained, and environmental outcomes are maximised.
- The Commonwealth has an important role to play in catchment management, particularly at the policy level, and policy relating to efficient water resource allocation is a high priority.
- Overall, more effort and resources are required to implement on ground solutions rather than more planning or acquiring knowledge about the state of the resources or best practice approaches to their management.
- Within a catchment context, management and coordination of water resources within an integrated water cycle approach has distinct advantages.

1. Introduction

Melbourne Water has been involved in catchment management for over a century, and as a major water authority its responsibilities cover most aspects of the water cycle. These responsibilities are:

- *Water Supply Catchment Management*

Melbourne Water manages protected catchments that supply most of Melbourne's potable water requirements. Melbourne Water sells bulk water from its headworks system to three retail water companies - Yarra Valley Water, City West Water and South East Water. It is then supplied to individual customers.

The combination of protected catchments and long detention times in large storage reservoirs enables the production of high quality water requiring only minimal treatment.

- *Stormwater Management*

Melbourne Water is responsible for regional-scale drainage and flood plain management, waterway management and stream water quality management across the greater Melbourne area, including the catchment to Western Port. These responsibilities cover an area of 8,400 square kilometres, involve over 5,000 kilometres of waterways and include management of 1,100 kilometres of underground drains, 700 kilometres of open channels, 200 kilometres of levee banks, over a hundred flood retarding basins, twenty five wetlands and a number of other assets.

Melbourne Water's involvement in waterways and drainage management commenced in 1920 when the Councils in Melbourne, faced with significant drainage and flooding issues, realised that a catchment-based approach was essential. Councils continue to provide local property and street drainage services within catchments up to 60 hectares in area, and are the equivalent of the retailers in the wholesale-retail model.

- *Sewage Treatment and Disposal*

Melbourne Water operates Melbourne's two major treatment plants that treat over 92% of the sewage produced in Melbourne. The remaining 8% is treated by the retail water companies, who also operate the sewage reticulation systems and pay Melbourne Water for the bulk treatment services it provides.

Melbourne Water's Strategic Approach

Through its responsibilities for the wholesale supply of water, the treatment and disposal of sewerage and the management of stormwater, Melbourne Water has an important role in the urban water cycle. Melbourne Water's recently developed strategic plan titled 'Catchment to Coast-Making the Connections in the Urban Water Cycle' is based on the need to adopt an integrated and catchment based holistic approach to the management of the urban water cycle if optimal outcomes are to be achieved for the community.

Importantly, the strategy depends on significant interactions with stakeholders and the community.

The basic premise which underpins the plan is that the management of water, whether it be drinking water, treated effluent, or stormwater needs to be viewed in the broadest context if the most prudent and sustainable use of this scarce resource is to be achieved. The plan also recognises that in achieving the sustainable use of water within a catchment there will be positive benefits to Port Phillip Bay which is effectively a 'sink' that receives all of the inputs from the catchment.

The CSIRO completed a \$12M study of Port Phillip Bay for Melbourne Water in 1995. This study found that the Bay was generally in good health, but there was no room for complacency and efforts should be directed to reducing the impacts of effluent discharged from the Western Treatment Plant during winter and of storm water discharged from the eastern shoreline. With Melbourne's population forecast to increase by 500,000 people over the next 15 years, adverse impacts on the Bay and waterways will result if appropriate management strategies are not adopted now.

Melbourne Water in its management of Western Treatment Plant and stormwater, is therefore well placed to play a leadership role in ensuring strategies are adopted that will protect the health of the Bay and the waterways into the future. The strategies to be adopted are outlined in the 'Catchment to Coast' publication.

2. Melbourne Water's Approach to Catchment Management

Melbourne Water has for some time adopted a catchment based approach which is demonstrated by the following examples:

- Melbourne Water's drinking water treatment policy is catchment-based. The level of treatment of water for domestic supply is determined according to the quality of the catchments and reservoirs from which it is obtained.

Both the World Health Organisation and the National Health and Medical Research Council guidelines for drinking water stress the importance of maximising the protection of catchments where water is harvested for drinking purposes.

The sole reliance on treatment plants to remove contaminants has been shown to be inappropriate as they occasionally fail, often in a spectacular fashion. Source water protection has risen in importance in recent years to become a focal area in terms of drinking water quality management. It could be argued that drinking water quality should be given a higher priority over other uses in a catchment given the obvious and very direct health benefits of a good water supply.

- Melbourne Water's management of water quantity and quality for domestic supply relies on a thorough understanding of catchment processes and land-use interactions, which is supported by an on-going research program and close liaison with Cooperative Research Centres (CRC) for Catchment Hydrology and Water Quality.
- The issue of nutrient inputs to Port Phillip Bay is being addressed on a whole-of-catchment, multiple-source, multiple agency basis.

- Melbourne Water prepares integrated drainage schemes for new urban and industrial development corridors on a local catchment basis. These schemes ensure minimal impact on local waterways, protect water quality and prevent downstream flooding.
- Interactions between sewage treatment, effluent disposal and re-use and the quality of urban and rural runoff and groundwater are carefully considered on a catchment basis in the course of developing forward strategies.
- Hydrological monitoring and analysis is done on a catchment basis to support water supply planning and water supply operations, flood warning services, water quality improvement strategies, nutrient management strategies and catchment action programs.
- Many local and regional advisory and consultative arrangements in the Melbourne area operate on a catchment basis.

3. The Role of the Commonwealth in Catchment Management

It is clear that the Commonwealth has a role to play in catchment management as it is in the national interest to ensure that the nation's land and water resources are managed in a sustainable manner. The following roles are recommended for the Commonwealth.

- *Development of a National Policy Framework for Catchment Management*

The Commonwealth should have a lead role in the formulation of policy that sets a framework to be adopted by the States. The policy development should be focussed on ensuring improvements in the catchment resource base for future generations. In this respect clear goals from a national perspective should underpin the identification and implementation of policy.

The COAG Strategic Framework for Water Reform is a good example of a national policy framework. This framework covers many of the issues relevant to catchment management including water allocation, pricing, community education and use of stormwater and wastewater as a resource.

- *National standards*

The Commonwealth should assist in the facilitation of developing and promoting a national approach to issues where this is Australia-wide community interest. Good examples of this include:

- Drinking water quality standards.
- Standards of flood protection.
- Developing appropriate methodologies and standards for determining environmental flows.

- *Leadership*

This requires working with and through the states to develop consensus, identifying and promoting successful models, and further analysing what needs to be done at the

Commonwealth level.

- *Support for on going research.*

Melbourne Water strongly supports the Commonwealth's continued support of the cooperative research programs, particularly through the Cooperative Research Centres (CRCs) for Catchment Hydrology, Freshwater Ecology, Water Quality and Treatment.

- *Funding.*

The Commonwealth's role in initiative and assistance funding must continue. The Government should explore avenues for improving the allocation processes and linking them to sound delivery mechanisms with guaranteed ongoing support and follow-up at the local level. The focus should be on maximising the leverage exerted by federal funds, and building on local ownership and commitment. It is very important to ensure that funds are directed to areas where there is the greatest chance of realising future benefits.

To illustrate this point, the Commonwealth Government recently awarded Melbourne Water a grant of \$3.5 M under the "Coast and Clean Seas" initiative to improve the quality of stormwater flowing into Port Phillip Bay. This money, with a further contribution of \$4 M from Melbourne Water, will be used to provide substantial stormwater treatment facilities and other on-ground works. The fact that Melbourne Water has core responsibilities in this area, and not only commands the expertise to design and manage such a project but also has the resources to operate and maintain the facilities into the future assures that there will be sustained long-term benefits from this initiative.

4. Planning, Resourcing, Implementation, Coordination and Cooperation

It is Melbourne Water's experience, that too often the allocation of resources between the above categories is often out of balance and does not reflect the wishes and needs of the community and stakeholders. The following comments are offered as an overall generalisation, acknowledging that some of the statements will not be true in all circumstances.

Over planned and under resourced

In general, it seems that the scope and ambition of the majority of existing plans and strategies, at all levels including national, state, regional and local, far outstrips the capacity to implement them. Community impatience is often the end result.

Over coordinated and under implemented

A lot of work seems to have been done in developing coordinated approaches to dealing with various issues such as salinity, nutrient management, catchment planning, vegetation management and the like. However, implementation in terms of results actually delivered still lags behind, probably because of the resourcing issues.

Over-cooperative and under-led

Cooperation, liaison, consultation and coordination are often extolled as the mainstays of integrated catchment management. Significant time and resources are devoted to various mechanisms that assist in achieving them, especially various forms of interactive planning and strategy development. However, leadership is often lacking.

5. Mechanisms for Monitoring, Evaluating and Reporting (MER).

To date, a great deal of debate has centred on uniform standards and approaches to MER, both within individual states and across the nation. One of the drivers in these debates has been a desire to “reduce” things down to some common measures in parameters that everyone understands. Financial accounting standards are often cited as a desirable model and the Committee will be aware of a recent national audit of water resources based on financial accounting principles.

However, while the dollar is a “nearly perfect” measure of financial value, having the same basic meaning in all sectors and environments across the country, there are few similar absolutes when it comes to environmental health or condition. Take measures of groundwater salinity for example. A very good result in one environment may be deplorable in another. In order to interpret the result, one must know the environment from which it came.

Melbourne Water has developed a useful approach for reporting on water quality in the urban and rural waterways around Melbourne. Water quality monitoring results are summarised in terms of the extent to which they indicate achievement of target values for each individual waterway or segment of a waterway. The target values are defined in State Environment Protection Policies prepared by the Environment Protection Authority for individual waterways or segments of large waterways in accordance with local conditions and expectations.

The result is the “Stream Water Quality Index” which rates water quality as ‘very good’ to ‘very poor’ depending on how the results of sample analyses compare with the desired conditions. Index values are derived explicitly from the parameters that are important to each particular circumstance. This provides a normalised result that communicates actual condition relative to expectation in simple, everyday terms such as ‘very good’ or ‘good’ or ‘poor’. An information sheet outlining the method is attached.

The Stream Water Quality Index approach could be applied to a host of other environmental and natural resource data types. It would facilitate reporting on a consistent basis without imposing the need to measure the same parameters across all environments.

The fact that MER can be very expensive is well known. It is important that data is only collected if it is going to be used to assist in decision making. The most sensible approach would be to determine the type, scope and scale of MER required on a catchment or sub-catchment basis and then to have some normalisation method such as the Stream Water Quality Index to aggregate results over larger areas.

6. Conclusion

Melbourne Water strongly supports the principles of integrated catchment management, given its role as being responsible and accountable for managing water resources in the greater Melbourne area within a total water cycle framework. The strengths of the arrangements that operate in the Melbourne area are as follows.

1. Melbourne Water presides over one of the best domestic water supply systems in the world. This has been achieved, and continues to be achieved because the organisation has ultimate responsibility for activities in the majority of the water supply catchments.
2. Melbourne Water's achievements in managing urban and rural runoff with a focus on regional drainage, flood plain management, waterway management and water quality protection also represent best practice performance at least in the Australian context.
3. Melbourne's sewage treatment and disposal arrangements are managed within an integrated catchment framework along with water supply, drainage and waterway management functions.

As previously mentioned, Melbourne Water is currently implementing strategies that will protect the health of the waterways and Bays into the future, by managing the water resources it has responsibility for in a holistic manner, and by adopting a total catchment 'systems' approach.

Leadership, innovation and cooperation are the cornerstones of Melbourne Water's approach as it recognises that the commitment of many other organisations and the community is required if improved catchment outcomes are to be delivered.

Melbourne Water would be pleased to provide further input to the inquiry if this would be useful.

Further Information

Further information on any aspects of this submission may be obtained by contacting

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