



SUBMISSION 39
APPENDIX 14
RECEIVED
28/09/2017

Environment, Natural Resources and
Regional Development Committee

Inquiry into the Management,
Governance and Use of Environmental
Water

Submission by Goulburn-Murray Water

August 2017



ENVIRONMENT, NATURAL RESOURCES AND REGIONAL DEVELOPMENT COMMITTEE

Terms of Reference

58th Parliament

Inquiry into the Management, Governance and Use of Environmental Water

Self-referenced by the Committee on 5 June 2017:

That the Environment, Natural Resources and Regional Development Committee inquire into the Victorian Environmental Water Holder annual report 2015-16 and report, no later than June 2018, into the management, governance and use of environmental water in Victoria including, but not limited to —

1. the assessment of the role of environmental water management in preventing or causing 'blackwater' events;
2. how environmental water and environmental water managers interact with, and utilise, management tools such as carryover and whether the carryover of environmental water impacts on the availability of water for irrigators;
3. consideration of what barriers exist to the more efficient use of environmental water and how these may be addressed; and
4. assessment of fees and charges applied to environmental water and whether these differ from those imposed on other water users.

Contents

| | |
|--|----|
| Overview | 4 |
| Response to Term of Reference 1 | 6 |
| Response to Term of Reference 2 | 7 |
| Response to Term of Reference 3 | 8 |
| River Capacity | 8 |
| Risk Management | 8 |
| Infrastructure | 9 |
| Timeliness | 9 |
| Recreational Interests | 9 |
| Response to Term of Reference 4 | 11 |
| Should Environmental Water Receive a Unique Service? | 11 |
| Funding the Environmental Water Managers | 11 |

Overview

Goulburn-Murray Water makes this submission to the Inquiry into the Management, Governance and Use of Environmental Water conducted by the Environment, Natural Resources and Regional Development Committee to outline its role in the management of water resources and supply in northern Victoria and to describe its role in environmental water management.

Goulburn-Murray Rural Water Corporation, trading as Goulburn-Murray Water (GMW), is a statutory corporation established under the provisions of the *Water Act 1989*. GMW manages water-related services in a region of 68,000 square kilometres, bordered by the Great Dividing Range in the south and the River Murray in the north and stretching from Corryong in the east down river to Nyah.

GMW manages around 70% of Victoria's stored water resources, around 50% of Victoria's groundwater supplies and Australia's largest irrigation delivery network. It manages regulated and unregulated river systems that flow into the River Murray and administers groundwater within its area.

GMW operates a number of storages and weirs on behalf of the Murray-Darling Basin Authority (MDBA), operates salinity mitigation works on the River Murray downstream of Nyah, and is the Victorian constructing authority for the MDBA.

The Minister for Water appointed GMW as the Resource Manager for all northern Victorian declared water systems. In this role, GMW works with environmental water managers to account for the use of environmental water across the systems.

GMW manages recreational and boating activities at 14 of its storages. This includes the management of houseboat licences at Lake Eildon and the management or leasing of caravan parks, clubs and public recreation areas.

There are large environmental water holdings in the northern Victorian water systems managed by GMW. The Commonwealth Environmental Water Office (CEWO) owns approximately one-third of the high-reliability water shares in the Goulburn and Murray declared water systems. The Victorian Environmental Water Holder (VEWH) holds bulk and environmental entitlements in most of the northern Victorian water systems. The VEWH also manages the Victorian bulk entitlements for the Snowy River water recovery project and the Living Murray Initiative. The latter is managed with the MDBA.

The CEWO, the VEWH and the MDBA use Victorian catchment management authorities¹ to plan and direct environmental water use across northern Victoria. GMW works with all of these agencies (collectively described here as *environmental water managers*) to plan and deliver environmental water in waterways and through the distribution network of the Goulburn Murray Irrigation District. GMW has established valued relationships with the environmental water managers and become well acquainted with the management, governance and use of environmental water throughout its region.

GMW's experience with managing and delivering environmental water suggests there are opportunities to further improve the management, governance and use of environmental water. Increased communications as well as strategic and targeted engagement with other water users and communities will help dispel the concerns that currently exist. Greater dialogue about the purposes of environmental water, the successes, and the lessons from uses that did not achieve planned objectives would generate greater public confidence. GMW knows of several successful environmental watering actions that would have benefitted from increased public attention.

There are opportunities for the governance of environmental water to further improve through more transparent governance arrangements.

¹ North East Catchment Management Authority, Goulburn Broken Catchment Management Authority, North Central Catchment Management Authority and Mallee Catchment Management Authority

GMW knows the environmental water managers in its region are doing good and important work within their current operating limits. GMW expects this Inquiry will reveal opportunities to improve on this work and further build harmonious operations with other water users.

If you require further information about this submission, please contact Dr Mark Bailey, Manager Water Resources, on [REDACTED] GMW would be pleased to present evidence at public hearings if invited.



Pat Lennon
MANAGING DIRECTOR

Response to Term of Reference 1

The assessment of the role of environmental water management in preventing or causing 'blackwater' events

A 'blackwater' event happens when the concentration of dissolved oxygen within a waterbody falls to low or zero levels. An event usually occurs when organic material washes into a waterbody and starts decomposing. Blackwater events are more likely when land is infrequently inundated and organic material accumulates over time. The deposition of the material into a waterbody is often enough to cause blackwater.

Blackwater events are a natural phenomenon and are possible in all water systems, whether regulated or unregulated. GMW believes blackwater events are much more likely to occur after natural riverine flooding or very heavy rainfall than be caused by environmental water.

Several blackwater events have occurred in northern Victoria since the Millennium Drought ended in 2010. Heavy rainfall on wet catchments caused rapid river rises and inundation of floodplains for the first time in many years in the Goulburn River in 2010 and the River Murray in 2016. The floods washed large volumes of organic material into the rivers and initiated the rapid decline of dissolved oxygen concentrations.

A blackwater event in the Goulburn River during 2016 followed intense rainfall over a tributary. The ensuing deoxygenated water entered the Goulburn River and affected fish and invertebrate habitats, even though the Goulburn River itself did not experience flooding.

GMW river operators and their MDBA colleagues had few mitigation options available to them during these events. GMW notes the use of environmental water to 'break up' the blackwater was considered, but dismissed as unviable because the fresher water released from storage would not catch up to the affected river reaches as flow continued.

GMW recognises that environmental water may be used to provide refuge for affected water fauna if alternative delivery routes (eg irrigation channels or constructed drains) are available. The location of the GMW irrigation delivery network across several northern Victorian river systems provides a number of points to discharge oxygenated water into affected waterways. While reactive, this approach can provide pockets of freshwater and potentially reduce the severity of a blackwater event. GMW and environmental water managers are collaborating on approaches to use the channel network constructively while not affecting other system users.

There is limited potential for environmental water to prevent blackwater events. Legislation and government policies (eg in relation to third party impacts) guide environmental water managers (and river operators) when conducting semi-regular inundation events to reduce accumulation of organic matter. The Victorian Government—with justification—does not allow any water to deliberately flood private land or infrastructure. The risk of flooding private land during intentional inundation of Crown land is too great with the existing uncertainty of rainfall and streamflow prediction. The current use of environmental water is confined to higher flows within the defined river channel, which largely removes any opportunity to remove organic matter above the natural river channel heights.

Response to Term of Reference 2

How environmental water and environmental water managers interact with, and utilise, management tools such as carryover and whether the carryover of environmental water impacts on the availability of water for irrigators.

Environmental water managers control large volumes of entitlement in northern Victorian systems. These entitlements—which are water shares or bulk entitlements—mostly share the same rights and properties as those held by irrigators, domestic and stock users, and urban water corporations. The environmental water managers can use the same management tools provided by Victorian legislation that are available to all entitlement owners.

As a supplier of bulk and retail water services, GMW believes the environmental water managers have the right to use tools such as trading and carryover to maximise the benefit of their entitlements. These tools provide the managers with greater choice about the timing, location and use of environmental water to meet ecological outcomes, just as irrigators and urban water corporations can use these tools to manage their own particular business needs.

GMW notes the ability of environmental water managers to use 'return flows' has allowed multiple uses of environmental water across systems such as the Murray, Goulburn and Campaspe. Environmental water released in the Goulburn and Campaspe systems has provided successful environmental outcomes before being recredited in the Murray and used for environmental watering of sites such as the Gunbower Forest and the Hattah Lakes. Under the return flow concept, water used in one system can be recredited for use at a downstream location in the same or a different system.

GMW argues that water management rules should apply equally to all customers where practicable, irrespective of the intended purpose of water use. This policy of consistency already applies to Victorian water management and should continue. There are notable exceptions, such as the application of return flows described previously and fee arrangements to facilitate environmental water use via the Goulburn Murray Irrigation District. GMW notes that the rules exceptions were largely implemented before significant environmental water holdings were established and some exceptions have been needed to provide suitable workarounds.

GMW encourages and supports environmental water managers working flexibly with consumptive water users to improve all users' outcomes when the opportunity arises.

Response to Term of Reference 3

Consideration of what barriers exist to the more efficient use of environmental water and how these may be addressed.

As a service provider, it is difficult for GMW to take a considered position on the barriers to the more efficient use of environmental water. Similarly, GMW does not comment on the most efficient use of irrigation water or urban water entitlements.

GMW chooses to outline below matters it is aware of from environmental water management and other water users.

River Capacity

Providing increased flows in the regulated rivers of water systems is a key objective of the environmental water managers in the Murray-Darling Basin. However, these increased flows may compete for capacity with demands for consumptive water use.

An environmental flow in a river typically involves a rapid flow increase to simulate the effects of rainfall. The delivery of an environmental flow currently requires several weeks of planning to ensure landowners are notified and prepared for the higher flows. However, the environmental flow may coincide with a sudden increase in demand for consumptive water use (usually irrigation). Without some form of intervention, there may be insufficient capacity in the river to supply both water uses without affecting supply or risking third party impacts such as flooding or loss of supply.

GMW observed a river capacity event in 2012, when an environmental flow in the Goulburn River downstream of Lake Eildon coincided with a rapid increase in irrigation demand following unseasonably warm weather. The GMW river operators negotiated with the Goulburn Broken Catchment Management Authority (acting as the environmental water manager) and the GMW irrigation scheduling teams to share the available capacity. While the resolution affected both water users, this demonstrates that a long-planned water order could be affected by a very short-term demand.

GMW is aware of the potential for similar capacity limitations to occur elsewhere in the Murray-Darling Basin water systems. Although, environmental water managers adopt a 'good neighbour' approach and adjust their watering events, there is a potential that this could compromise the effective use of environmental water.

Victoria's water entitlement framework includes mechanisms such as extraction shares (in rivers) and delivery shares (in irrigation districts) to resolve access when demand exceeds supply. The 'good neighbour' approach has so far avoided the need to apply sharing mechanisms. The increasing demand for environmental water deliveries and changing patterns of consumptive water delivery may lead to greater interest in sharing rules over the longer term.

Risk Management

The Minister appointed GMW to manage the resources, storages and distribution systems of the northern Victorian regulated water systems, including the Goulburn River. GMW strongly respects legislation and property rights in its water system planning and delivery services. The operation of the Goulburn River downstream of Lake Eildon exemplifies GMW's approach to river management. To minimise the risk of rainfall and tributary flows causing third party impacts, GMW routinely reduces Lake Eildon releases at the earliest opportunity to ensure the Goulburn River remains within its channel.

The resulting rapid decline in the baseflow of the Goulburn River has the potential to affect environment outcomes. Improved monitoring and greater predictive skill would enable GMW to maintain higher flows while minimising the risk to third parties.

Infrastructure

GMW works with environmental water managers across northern Victoria and recognises that environmental water use must have regard to the presence of private infrastructure such as irrigation and/or domestic and stock pumps.

The vast majority of private pumps on rivers were installed long before the establishment of the environmental water holdings. The pumps were situated to best meet the needs of the owner and the contemporary river operating practices. Pumps were often placed within the river channel to minimise lifting heights and the cost of installation.

The introduction of environmental flows means that river operating practices are changing. Similarly, pump owners may be potentially inconvenienced by the new river operations.

In other parts of the Murray-Darling Basin, infrastructure investment has occurred to achieve environmental benefit with minimal impact on long-term operations. The construction of a new regulator on Gunbower Creek to divert water into the Gunbower Forest, the construction of pumps to divert water into the Hattah Lakes system and the construction of fishways on in-stream water control structures are examples of environmental works and measures that are designed to generate environmental benefit with little impact on existing operations. GMW fully supports this approach, as the constructed works also save large volumes of water and minimise disruption to other water users.

Timeliness

The delivery of environmental water in a river system currently requires a long period of planning and preparation. The delay is linked to the infrastructure issues identified in the previous section; sufficient notice must be given to enable affected landowners to make alternative arrangements and/or move threatened infrastructure.

GMW currently asks environmental water managers to provide about six weeks' notice of planned environmental flows in the river systems it manages. This timeframe allows GMW to contact landowners by their preferred method of communication and the appropriate environmental water manager to advertise the planned event in newspaper public notices and general media stories.

Far less preparation time is necessary when environmental water is delivered via the channel network of the Goulburn Murray Irrigation District. Private infrastructure is not jeopardised by the environmental water, but GMW staff must prepare outlets and distribution networks to ensure proper accounting and system operation.

Shortened times to initiate environmental water delivery would allow more targeted deployment that better matches natural hydrological cues such as rainfall and tributary inflows.

Recreational Interests

The barriers to more efficient use of environmental water are not all physical. Emerging interests, such as recreational use, also need to be considered in this context.

The 2014/15 and 2015/16 water years² demonstrated the interaction between different water use outcomes. Under very dry conditions, Lake Eppalock (the major storage for entitlements in the Campaspe system) began falling rapidly as irrigators and the environmental water manager began accessing their water to sustain farms and the environmental health of the Campaspe River downstream. The falling water levels affected recreational use in Lake Eppalock.

GMW believes the issues identified by the Lake Eppalock example demonstrate the importance of efforts to describe the uses of environmental water in reducing concerns and increasing understanding

² A water year refers to the twelve months starting from 1 July.

and acceptance. Greater dialogue about the purposes of environmental water, the successes, and the lessons from unachieved objectives would generate public confidence.

While there is community uncertainty about the benefits of environmental water, there is a risk to its effective use.

Response to Term of Reference 4

Assessment of fees and charges applied to environmental water and whether these differ from those imposed on other water users.

GMW recognises that the regulation of waterways and impoundment of water to enable consumptive uses such as irrigation and urban supplies causes environmental impact. Further impacts come from changing land use across catchments. GMW understands that the security of water supplies and agricultural use of water have underwritten social and economic development across the country.

The Minister for Water's *Statement of Obligations* requires GMW to minimise the impacts of its activities on the environment. GMW undertakes operations in cooperation with relevant environmental agencies to enhance ecological benefits where possible and provided customer service standards are not compromised. In some ways, the availability of consumptive water and large impoundments has actually benefitted the environmental values of regions such as the Kerang Lakes, which is a Ramsar listed wetland of international significance.

However, it is not possible for GMW alone to mitigate the environmental impacts of consumptive water supply and use. Governments have charged the environmental water managers such as the VEWH and the CEWO with environmental improvement actions. The extent to which these managers discharge their responsibilities is linked to the fees and charges applied by water service providers.

Should Environmental Water Receive a Unique Service?

GMW contends that the services it provides for environmental water should be no different to those offered to any other customer. GMW currently uses a supply by agreement with the VEWH to provide environmental water delivery services in the Goulburn Murray Irrigation District. The agreement gives the VEWH a different level of service compared to irrigators with fully interruptible deliveries, at a fee based only on delivery share prices. This approach is consistent with the *Victorian Waterway Management Strategy* that requires environmental water managers to pay applicable charges for the costs incurred by storage and system operators such as GMW while storing and delivering environmental water. GMW is eager to use the experiences from the agreement negotiations and conversations with other customers as the basis for transparent and equitable ongoing tariff arrangements, as expected under *Water for Victoria*.

GMW provides a water storage and delivery service for all of its customers. In this manner, environmental water managers should be no different to any other customer, irrespective of entitlement volume or intended use. There should be no need for any customer to subsidise or be subsidised by the fees and charges applied to any other customer.

For example, if an environmental water manager wants a particular service, it is not appropriate to expect that it should be provided and paid for differently than for any other customer receiving the equivalent service. Nor is it appropriate for the environmental water manager to be expected to pay more for a delivery service than other customers.

GMW believes that the current regulatory approach to prices for prescribed water services—overseen by the Essential Services Commission—supports its position. All customers are consulted during price preparation and are able to make submissions to the Essential Services Commission before it makes a determination.

Funding the Environmental Water Managers

GMW is working with DELWP, catchment management authorities and other water corporations to deliver *Water for Victoria* actions relating to clear and transparent charging arrangements for

environmental water. The following comprises advice GMW gave DELWP to inform the *Environmental Water Charges Information Paper*.

From an economic perspective, GMW suggests the funding options for the environmental water managers could comprise three theoretical models: commercial revenue, beneficiary pays, and polluter pays.

Under the commercial revenue model, economic theory requires environmental water managers to secure their own revenue to fund their activities. Under current funding arrangements, this would preclude any government funding and leave only active participation in the water trading market as a source of funds. GMW does not support this model, as their substantial entitlement holdings may allow the environmental water managers to distort the market at the expense of other participants. There is also a strong societal expectation that the environmental water managers are performing a public good and should not rely on market mechanisms and businesses to fund their services. The reliance on trading of the primary asset also affects the ability of the environmental water managers to properly discharge their expected duties.

A beneficiary pays model could theoretically be appropriate in the GMW region, particularly as the Murray-Darling Basin Plan will generate sustainable consumptive water use. Any on-going environmental impact and remediation effort has been accepted by governments as appropriate to achievement of an optimal triple-bottom-line outcome, and implicitly leads to a situation in which appropriate government funding is provided via general taxation to ensure community expectations are delivered.

The current state of the environment is a legacy resulting from society preferences over time, with the benefits from improvements to the environment being enjoyed by society as a whole and as a public good. This suggested approach matches the beneficiary pays model recommended by GMW.

However, if the polluter pays model was considered—theoretically as an opportunity to influence consumptive water users' behaviour or as another revenue source—then GMW believes that externality prices should be related to specific environmental impacts and borne by those contributing to the impact, including water and land users. This group will involve people outside of the customer groups and locations where GMW provides storage and delivery services to the environment.