



WATER  
ENERGY  
DESIGN

**Sydney**  
PO Box 286  
Lane Cove NSW 1595  
M +61 (0) 431 663 310

**Melbourne**  
Tenancy 4  
Level 9 CarLow House  
289 Flinders Lane  
Melbourne VIC 3000  
P +61 (0) 3 9654 7274

**Brisbane**  
8A Princhester Street  
West End QLD 4101  
PO Box 5945 West End QLD 4101  
P +61 (0) 7 3255 1571

**Canberra**  
Australian National  
Botanic Gardens  
Clunies Ross St  
Acton ACT 2601  
GPO Box 569, Canberra ACT 2601  
P +61 (0)2 6262 5033

**Kunshan, China**  
505 Baitang Road,  
Zhoushi Town  
Jiangsu Province

[info@e2designlab.com.au](mailto:info@e2designlab.com.au)  
[www.e2designlab.com.au](http://www.e2designlab.com.au)

2.10.2015

### **E2Designlab submission - Review of prices for Sydney Water Corporation**

This submission has been prepared on behalf of the staff of E2Designlab, an ecological and engineering design consultancy who provide water and stormwater management expertise and advice to government, utilities, developers and communities. Our staff work across Australia, and some have been instrumental in driving key policy and practice changes at a state and local level throughout the evolution of water services and stormwater management over the last 20-30 years. We have a close working relationship with research bodies in this field and also with partnering professions working in land development, planning, and economics.

We welcome the opportunity to contribute to this review and appreciate the interest in the broader water management and liveability outcomes that are influenced by the regulation of water pricing.

#### **Summary:**

Our submission relates to proposed expenditure (issues 10,12,13), stormwater charges (issue 48), charges for wholesale customers (issues 60,61) and pricing for recycled water (issues 62, 63).

- Integrated Water Cycle Management Strategies (including options for reuse of a range of alternative water sources) need to be prepared to ensure that proposed expenditure is efficient and will achieve the intended longer term strategic objectives and water management outcomes. Efforts to drive down water pricing and operating costs of water businesses, has had the effect of reinforcing traditional management silos.
- A change in the water utility business model (including institutional arrangements for stormwater management) is needed to take full advantage of the opportunities

for integrated water cycle management. A structure is needed that facilitates public and private water utilities in providing an increased level of service for communities, with water management delivering much broader benefits in liveability, health and resilience – consistent with our aspirations for our cities.

- There are costs associated with providing an increased level of service (and potential efficiencies through truly integrated water cycle management).
- Pricing for recycled water (from treated wastewater, treated stormwater or other sources) should reflect the fact that it is 'fit for purpose' rather than set at a discounted price that does not reflect the treatment costs and triggers a reduced incentive for investment in recycled water. Scarcity pricing is an important mechanism that may help to communicate the value of water, the importance of efficient water use and mitigate environmental externalities when supply is limited.
- Regulatory tools that put a price on the externalities of urban development (such as Clause 56.7 of the Victorian Planning Provisions) can be effective in achieving water management outcomes, encouraging innovation, providing economic incentives and facilitating the development of emerging markets.

Further discussion of some of these aspects is provided below.

### **Integrated water cycle management**

Integrated water cycle management planning is required to ensure efficient capital expenditure, appropriate servicing for growth areas and desirable water management outcomes. Alternative water sources could represent a significant economic opportunity for our cities, if harnessed to increase urban sustainability by:

- Increasing urban liveability associated with city “greening” by delivering enhanced amenity value and improved health benefits.
- Retention of water within the urban environment combined with green infrastructure to tackle the Urban Heat Island effect and improve microclimate outcomes.
- Increasing urban food production to the city through the use of urban water discharges as an irrigation supply.
- Improved flood resilience through rainwater and stormwater harvesting.
- Improved drought resilience through reduced demands on potable supplies, retention of water within the urban landscape and improved deep soil moisture stores.
- Developing safe, economically sustainable approaches to indirect reuse of alternative water sources as potable water.

The current influence of competition policy and treasury and finance settings geared to driving down water pricing and operating costs of water businesses, has had the effect of reinforcing traditional management silos. These traditional silos focus on optimisation of single purpose solutions rather than delivering the full suite of economic benefits through an integrated approach. Creating industry efficiency is clearly desirable. However, refashioning the current siloed water supply, sewerage, and drainage industries into effective delivery bodies for Integrated Water Cycle Management will need investment.

In addition to infrastructure planning, it is important to understand that urban land use planning, master-planning and urban design are crucial activities to enabling and undertaking successful IWCM. Appropriate land use and urban design allow for urban agriculture, urban heat island mitigation, increased local employment, reduced travel, and efficient water use.

The concepts of Water Sensitive Urban Design and Integrated Water Cycle Management provide a framework to consider water as both a commodity and a natural resource. They draw on both conservation and market instruments to optimise water use and the overall benefit to the ecosystem services that support our communities and the environment.

### **Change to business model is needed for IWCM**

The current structure of our urban water utilities is not well geared to take advantage of alternative water sources. A fundamental shift in water resource management will require significant change in the water industry business model. The shift will provide an increased level of service for communities, with water management delivering much broader benefits in liveability, health and resilience. It is worth noting that all previous step changes in levels of service (reticulated water supply, sewerage, formed roads and formal drainage) all came with significant investment and increased service costs. Similarly, a step change towards integrated water management and the delivery of multiple benefits requires a restructuring of financial mechanisms away from traditional singular outcome metrics and recognition that further investment will deliver value.

There are strong drivers to preserve and protect our past investments in high value potable water supplies (and to help justify the past environmental damage created by the development of assets such as dams and reservoirs). Accordingly, the future use of alternative water sources (including urban stormwater) will need to be integrated in a sensible way that makes efficient use of past investments while diversifying opportunities. For this to happen in a significant way will require a whole of

government approach to the change and clear signals from state and federal treasury and finance areas that a change of this type is needed and is in the long term interests of Australia.

This transition needs the recognition that Integrated Water Cycle Management has real economic value in terms of:

- Increasing the resilience and flexibility of urban water supply and management systems to adapt to future environmental conditions, technological advances, and economic conditions.
- Increased liveability of our cities and health of our citizens through provision of safe water, cool, green and shaded urban areas and healthy urban water environments.
- Provision of important nutrients and water supplies through the use of treated wastewater or stormwater for agricultural production and resource recovery, improving the connection of cities to their peri-urban and surrounding rural areas.
- Improved health and resilience of waterways, bays and coastal regions which provide critical income through tourism, fisheries etc.
- Creating a value and a market for the recovery and use of urban wastewater and stormwater products.

### **Planning for growth and implications for servicing infrastructure**

In most areas of Australia, including Sydney, development charges from utilities are generally independent of the real costs of servicing new growth areas. Generally, these development charges are capped at a rate which is deemed 'acceptable' and the additional costs are passed on to the broader community. Servicing costs based more closely on actual land capability assessments and servicing costs would help direct development to more concentrated areas and as a result simplify servicing development areas from an overall sustainability perspective (Water, Power, Transport, Social, Environmental, etc.).

It also needs to be recognised that effective Integrated Water Cycle Management may require additional land area. Better integration of water management with habitat, vegetation, open space and the urban form is therefore essential to support urban development that provides high amenity and liveable outcomes. As our cities become denser, we cannot afford to make compromises on the essential provision of natural and open space assets to support communities, ecology and the local management of resources, including water.

IWCM strategies for the growth areas are critical to ensure that any subsidies are appropriately and efficiently spent on the right infrastructure and on a well considered plan for servicing all aspects of the water cycle (including drainage). Strategic planning

is required to deliver on the commitments in the 2010 Metropolitan Water Plan that envisaged the key longer term initiative for Recycling: *“future large-scale water recycling schemes will be delivered in Sydney’s west as population grows”* and *“it is projected that up to 100 billion litres of water may be recycled each year by the 2030s”*. Drivers for shorter term cost savings can impact on the desired strategic water management outcomes.

### **Regulatory tools to stimulate innovation and reduce pollutant loads.**

Sydney Water’s core objectives include protection of the environment. Environmental Protection Licences are load-based and aim to set minimum standards for environmental performance that ensure environmental protection is adequate. This regulation also can provide an incentive for pollution reduction, allow flexibility in strategies to manage pollutants and provide a structure that allows for market mechanisms to be used.

Pollutant loads associated with stormwater catchments need to be understood and market mechanisms for pollutant reduction considered to ensure desired environmental outcomes for receiving environments are realised. It is clear that failing to adequately manage urban drainage in the western growth areas presents a significant environmental risk to local receiving waterways. IWCM options need to be considered to ensure these risks are managed and servicing strategies are optimal.

Consideration should be given to potential policy and regulation tools that provide a mechanism and price signal to reduce pollutant loads with flexibility (potentially through an offset). For example, Clause 56.07-4 of the Victorian Planning Provisions, requires developers to construct systems to reduce stormwater pollutant loads (typically using bioretention or wetlands) or pay an off-set amount to Melbourne Water to construct suitable assets elsewhere. This effective regulatory tool (and the offset cost charge for modelled annual Total Nitrogen load reductions) has provided a robust dollar value indicator for economic analyses to reflect the cost of some externalities associated with environmental impacts.

Regulatory tools that put a price on the externalities of urban development (such as Clause 56.7 of the Victorian Planning Provisions) can be effective in achieving water management outcomes, encouraging innovation, providing economic incentives and facilitating the development of emerging markets.