

Response to the Productivity Commission's National Water Reform Issues Paper

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Table of contents

1 Overview	2
2 Introduction	3
2.1 Our operating context	3
3 Key areas for future urban water reform	4
3.1 Proposed preliminary framework	4
3.2 Integrated Water Cycle Management	4
3.3 Customer centricity	6
3.4 Competition and pricing	7
3.4.1 Competition	7
3.4.2 Developer charges	8
3.4.3 Merits review	8
3.5 Environmental regulation	8
3.6 Metropolitan water planning in NSW	9
3.7 Conclusion	10
Appendix A Progress to date	11
A.1 Economic regulation and efficiency gains	11
A.3 Economic level of water conservation	11

1 Overview

Sydney Water appreciates the opportunity to respond to the Productivity Commission's *National Water Reform – Issue Paper – March 2017*. This submission presents Sydney Water's priority areas for future urban water reform:

- **integrated water cycle management (IWCM)**

The National Water Initiative (NWI) should provide a clear policy direction at a national level to facilitate IWCM where valuable. This would allow more sustainable, liveable and resilient cities, which in turn may improve productivity and economic growth. Policy direction should focus on clarifying and improving existing opportunities to achieving IWCM; along with removing governance and regulatory barriers, which, in many cases, are greater barriers than knowledge, skill and technical gaps. More work is also needed to promote early consideration of IWCM in planning processes, and amend delivery processes and regulatory frameworks where required.

- **customer centricity**

There is a need for policy direction and potential changes in regulatory frameworks to encourage and facilitate greater customer centricity in water and wastewater services, to ensure the industry is delivering the outcomes customers want. In other jurisdictions internationally, the role of the economic regulator and the utility in demonstrating clear understanding of customer-desired outcomes in price setting has taken new directions and forms that may provide learnings for the Australian context.

- **competition and pricing**

More work is needed to define the objectives of competition in urban water markets, and support competition as a means of improving industry efficiency, where it can improve the long-term interests of consumers. Regarding pricing, while much progress has been made to date, further opportunity still exists to refine and improve pricing frameworks. This includes considering how pricing could better consider externalities of service provision.

- **environmental regulation**

The NWI should support greater use of outcomes-focused regulation, as opposed to prescriptive methods-based regulation. This will assist to ensure positive environmental outcomes for communities with optimised costs and benefits.

- **metropolitan water planning**

Within the Sydney metropolitan area, significant progress has been made with a strong planning process established during the Millennium drought. This has been built on in the years since, culminating in the recent release of the 2017 Metropolitan Water Plan. We support continuing improvements to this process, particularly for whole-of-water cycle planning beyond supply security. This could also be an avenue to reconsider water governance in the urban context.

In summary, there is a great opportunity for the Australian urban water industry to continue its leading role. We look forward to being part of this opportunity.

2 Introduction

Sydney Water supports the objectives of the Productivity Commission's *National Water Reform* review. We note that the enquiry aims to:

- assess progress across jurisdictions in achieving NWI outcomes and objectives
- consider potential and realised benefits from NWI implementation
- consider the scope for improving the NWI
- make recommendations for future reform and priorities for reform.

2.1 Our operating context

Sydney Water's operating area consists of mainly urbanised areas in Sydney, Illawarra and the Blue Mountains. We are Australia's largest water utility, supplying water, wastewater, recycled water and some stormwater services to almost 5 million people. We are a state-owned corporation established under the *Sydney Water Act 1994*, with three equally important objectives: to protect public health, to operate as a successful business and to protect the environment.

In Sydney, bulk water supply is vertically separated from water treatment, distribution and retail; and wastewater retail, collection, treatment and disposal. We purchase bulk water from WaterNSW, and, under certain conditions, the Sydney Desalination Plant Pty Ltd. Prices for bulk water and the prices we charge our customers are set by the NSW Independent Pricing & Regulatory Tribunal (IPART). IPART is currently finalising its first determination of wholesale prices, that will apply to services that Sydney Water provides to privately owned utilities licensed under the *Water Industry Competition Act 2006* (the WIC Act).

Major policy decisions regarding urban water management are determined on a whole-of-government basis, through the NSW Government's Metropolitan Water Plan.

Given our context and experience, many of the rural issues covered by the NWI, such as water trading, have not been considered in this submission. The urban water components of the NWI are of most relevance to us. This submission:

- sets out the areas we believe present the greatest opportunity for reform in the urban water sector (see Overview and Section 3)
- provides some information about progress to date against NWI objectives in Sydney, including a case study on our new Economic Level of Water Conservation (ELWC) methodology (see Appendix A).

The Water Services' Association of Australia's (WSAA) submission, which we contributed to and endorse, also contains information on these areas.

3 Key areas for future urban water reform

Sydney Water's response to the preliminary framework proposed by the Commission and our recommended priority areas for future reform are outlined in more detail below.

3.1 Proposed preliminary framework

The Commission's proposed preliminary framework in the Issues Paper appears sound. The references to urban water services align with several priority areas for future work noted in this submission, such as:

- accounting for consumer preferences in relation to the security, reliability, quality and cost of water services
- ensuring environmental benefits are recognised, and impacts are managed efficiently and in accordance with community expectations and standards
- considering IWCM in planning. Barriers to progress in this area lie not just in water service planning. Rather, a multi-faceted approach is needed in terms of enabling governance structures, policies, better land-use planning including earlier consideration of water, wastewater and stormwater servicing, as well as potential changes in regulatory and funding frameworks to make it happen.

3.2 Integrated Water Cycle Management

To remain internationally competitive in a knowledge economy, cities like Sydney must provide exceptional urban places to attract and sustain investment, and support productive, vibrant communities.

Opportunities for a Water Sensitive Greater Sydney (CRC for Water Sensitive Cities, 2016)

IWCM is the key area of reform where large scale adoption has not occurred in the NSW urban water market. The focus has been on improving efficiency of traditional water services, and customers have benefitted from reliable services and low bills. However, there has not been a concerted effort to ensure that coordinated water and land planning processes, as well as governance of urban water, are well aligned to enable large scale adoption of IWCM in Sydney where it delivers value through efficiencies or superior liveability outcomes.

IWCM broadens the service offering to include improvement of the role and contribution of water to liveability of the city. It reflects three 'water sensitive cities' principles:

1. Water management should consider all water within the city in a total water cycle management framework. This is to be reflected in urban planning.

2. Ecosystems are essential to city welfare, and the interaction of water and urban form (particularly around waterways) should improve ecosystem functions providing services to the community.
3. Governance and decision-making should be broadened to include communities and customers in a co-design relationship. This would include consideration of future generations.

Outcomes from IWCM can allow a more sustainable, liveable and resilient city, which in turn improves productivity and economic growth.

Adoption of a range of IWCM approaches is needed to help address a range of urban water challenges that we are facing in Sydney, particularly from high forecast population growth and ongoing climate change impacts. These challenges include:

- improving waterway health in the face of population growth and increased development, with associated impacts
- making healthy waterways and high quality greenspaces more accessible to communities
- delaying and potentially avoiding major infrastructure augmentation (bulky spends)
- better managing flood risk
- enabling urban cooling and greening, especially in response to increasing temperatures and urbanisation in Western Sydney
- developing water infrastructure that is resilient in the face of climate change
- continuing our essential business of maintaining high quality drinking water.

Work is needed on a number of fronts to encourage the use of IWCM where it can provide demonstrated benefits to customers and the community, as outlined below.

Clear policy direction at national and State levels

To realise potential benefits of IWCM, clear policy direction is needed. National reform could set policy and guidance for the provision of water services that deliver broad customer and catchment benefits. Guidelines could outline minimum environmental and community performance standards expected by utilities and suppliers.

This would create a mandate so that water planners must consider IWCM. The resulting benefits such as urban cooling, improved waterway health, flood protection, creation and maintenance of (and community access to) local waterway corridors and greenspace, should clearly be incorporated into planning, plus valued and assessed in decision-making.

A reconsideration of roles and responsibilities in urban water management

In Sydney, there has been a historic separation of water, wastewater and stormwater provision, and catchment and land management, with siloed decision-making and price-setting frameworks. Roles and responsibilities are clear for traditional water and wastewater servicing, but do not necessarily support more integrated approaches. To enable effective IWCM, different roles may

need to be allocated to existing water managers. For example, water and wastewater operators could be given responsibility for stormwater management in new growth areas. This would make it easier to integrate management, understand costs that are avoided through integration of different systems, trade-offs and opportunities to deliver efficient integrated services. Further, responsibility could be directed to include waterway health or urban cooling outcomes.

Potential changes to enabling planning instruments and regulatory frameworks

The NSW Government's Draft District Plans contain aspirations for growing cities with better urban form, that are liveable, attractive, cool and green. IWCM approaches will be essential to achieve such goals. Changes in supporting planning instruments and regulatory frameworks may be needed to enable IWCM solutions to be put into practice. There is currently poor alignment between urban planning processes and the delivery of integrated water cycle outcomes. The NWI could also provide a leadership role in identifying the beneficiaries of better water cycle management and appropriate funding sources.

Consequences of the slow adoption in embedding IWCM in business as usual operations include ongoing impacts to waterway health from increasing density and greenfield development, and poor city productivity. Without an enabling regulatory framework, the major water utilities have limited incentive to innovate and provide integrated solutions even though these solutions offer intrinsic benefits. This is compounded by the risk that utilities may not be able to recover the costs of IWCM because regulatory frameworks have limited scope to recognise externalities.

We note two upcoming projects that may interest the Commission:

- a review by IPART of public utility recycled water funding in 2017–18
- a NSW Government “Water Smart Cities” project that will seek to deliver plans that show more optimal ways of linking land and water planning, and delivering urban water services.

3.3 Customer centricity

There is a trend across the urban water industry world-wide towards more proactive customer engagement to inform key business decisions and regulatory processes. In some jurisdictions, the regulator has linked the utility's customer engagement performance to financial incentives. This is often to improve customer service and / or address increasing bills.

In the Sydney context, our economic regulator, IPART, has moved somewhat along this path, recently recommending to the NSW Government that Hunter Water Corporation be required to survey its customers to inform a future review of its system performance standards. In addition, in its *Guidelines for Water Agency Pricing Submissions* (December 2015), IPART notes that it expects utilities to consult with customers on proposed prices, and provide evidence of customers' willingness and capacity to pay for any proposed new charges or large discretionary expenditure. However, unlike in other jurisdictions, there has been no financial incentives linked to customer engagement.

We strongly support greater involvement of customers in planning and regulatory decision-making processes and are actively pursuing this. We believe stronger engagement benefits the industry by better enabling it to deliver outcomes that customers want. However, the industry may also need improved institutional and regulatory frameworks to support this.

The NWI can influence the national agenda around customer engagement, including providing guidance on models of engagement. There are currently a wide range of models available – from a simple consultation/respond model about proposed prices (which we and IPART do now) to more focused surveys on issues of concern, quantitative choice-modelling studies or deeper, more ongoing engagement models that enable customers to have an ongoing role in influencing decisions and direction.

Guidance at a national level would help to ensure service providers are not discouraged from pursuing greater levels of customer engagement due to a lack of certainty about the best model to adopt or level of evidence needed to influence regulatory or policy settings. It would also help to achieve consistency in approaches and applications.

3.4 Competition and pricing

While there has been good progress in economic regulation in the Sydney context, competition remains an area of unfinished business. There are also still opportunities for further refinement to pricing and regulatory frameworks, such as considering the reintroduction of developer charges and including a merits review process.

3.4.1 Competition

Sydney Water outsources a considerable proportion of our expenditure. As a result, we are very familiar with the benefits resulting from competitive sourcing arrangements, which enable efficiencies through lower prices and / or providing better services to customers. Similarly, we support direct competition in the urban water market where it promotes efficiency and lowers prices or adds value for customers.

Given the structure of the market, the nature of water and wastewater services and the established postage stamp pricing structures, there will always be challenges in stimulating a vibrant competitive retail market for customers in the Sydney region. This was acknowledged by the Productivity Commission in its inquiry into the Australian Water Sector in 2011, when it stated (page 245) that the potential gains from competition were likely to be modest because:

...compared with other utility sectors, a greater proportion of costs are in natural monopoly elements of the supply chain (for which competition in the market would be inefficient).

Any moves to increase the amount of competition within the urban water market should carefully consider the costs and benefits of those endeavours, particularly for end-use customers. Sydney Water's position in IPART's current review of wholesale prices has been that the customers of public utilities should not subsidise inefficient private entry to the market.

3.4.2 Developer charges

Developer charges are a simple mechanism whereby a developer essentially pays the infrastructure costs for the assets required to service their particular development. Given the range of growth environments (for example, well established infill systems with spare capacity, to greenfield areas with little existing infrastructure), developer charges can vary from zero to many thousands of dollars per lot, depending on the input costs and the calculation methodology in each jurisdiction.

Developer charges recover the residual cost of growth after revenue from usage charges and the general customer base (to recover avoided costs) has been taken into account. They are designed, among other things, to be a source of funding for the infrastructure required to service growth and to send signals to developers about the costs of development in different locations. Developer charges are used widely across the Australian water industry in varying forms.

In 2008, the NSW Government set Sydney Water's and Hunter Water's water, wastewater and stormwater developer charges to zero. This was prompted by a desire to accelerate affordable housing. Now, rather than recover the costs of growth from developers, Sydney Water recovers the costs of servicing new developments from its general customer base. This means that those benefitting from the growth infrastructure (that is, developers) do not pay for the services.

There may be some benefit in considering the reintroduction of developer charges in NSW, as part of broader exploration of value capture. Re-introducing developer charges would send price signals to the market on the costs and risks associated with developments in a particular region. It may also benefit competition by creating a more level playing field between incumbents and private utilities and encouraging new entry where private utilities can service a new development more cheaply than the incumbent.

3.4.3 Merits review

A further proposal for reform to the regulatory framework in which many water utilities operate would be the inclusion of a merits review system or right of appeal. In the Sydney context, IPART's role in pricing is deterministic, thus its decisions are final. Other utility industries, such as energy, have had recourse to merits reviews in cases of regulator error.

The inclusion of a right of appeal not only provides a mechanism to address occasions of poor regulatory practice, it provides pre-emptive discipline for regulators around decision-making processes. Other regimes show that it is possible to include restrictions on the use of the merits review system that prevent frivolous and time-wasting appeals.

3.5 Environmental regulation

Environmental regulation is fairly separate from economic regulation in the Sydney context. There is scope to better integrate these two regulatory areas, to ensure that the costs of environmental initiatives are balanced with the costs of the desired environmental outcomes. For example,

environmental cost-benefit frameworks remain under-utilised and are an area where the NWI could provide guidance and direction.

The delivery of better liveability-related outcomes could be assisted by policy statements at a holistic Federal and State level on waterway health objectives. For example, pollution targets applied to wastewater treatment plants ('point source') are currently set without regard to other sources of pollution within the catchment ('diffuse source'). There can be a disconnect between such targets and actual environmental outcomes. It is also hard to assess the effectiveness of such regulation if there are no agreed catchment-wide or city-wide goals to compare them to.

The lack of regulation for diffuse stormwater pollution sources (typically managed by local governments) also contributes to the challenge of implementing potentially valuable combined stormwater/wastewater solutions.

The NSW Environment Protection Authority has recently begun a review of its load-based licensing scheme. Sydney Water has advocated for a scheme where pollutant reductions would be linked to environmental outcomes, with costs established through market-based trading schemes. This is a long-term objective that will only be achieved in a realistic timeframe. As an interim measure, we have proposed that the EPA consider the use of 'offset' arrangements. For example, a water utility could invest in an agricultural run-off prevention scheme as a lower cost alternative to upgrading its wastewater treatment plants. By introducing flexibility to reduce pollutants from a number of sources, the effectiveness of economic incentives will be improved and the potential for positive environmental outcomes increased.

3.6 Metropolitan water planning in NSW

Sydney's metropolitan water planning process is mature, and encompasses most NWI recommendations to date. The process involves good cross-agency collaboration, a sound assessment of the costs and benefits of different options, and strong community input.

The recent release of the 2017 Metropolitan Water Plan should enable greater transparency of future decisions to invest in new water supplies and respond to drought. We welcome recent commitments to review the plan regularly and the continuous improvement approach adopted by the NSW Government, with good progress to date in developing a more sophisticated, adaptive monitoring approach. Further potential improvements in this area are outlined below:

- more holistic "whole of water cycle" plans that consider the impacts and costs of stormwater and wastewater management, including waterway health impacts. Currently, the Sydney Metropolitan Water Plan focuses on a water security and water supply/demand framework.
- a broader consideration of alternative water supply and demand options, such as IWCM approaches for new developments, water recycling, rainwater tanks and demand management. This is important to enable Sydney Water to deliver on the NSW Government's vision for a rapidly growing "garden city" or "parklands city" in Western Sydney, with high quality, connected greenspaces and healthy waterways. The NWI is well-placed to provide national leadership on exploration of non-traditional options.

- better linking of processes that inform NSW's Water Sharing Plans and the allocation of water access licences with Sydney's Metropolitan Water Plan. This may reveal if catchment or climate change impacts will affect the quantity or quality of water available to both rural and urban users. It may also reveal any opportunities for trading between rural and urban water users in Sydney's main water supply catchments.
- improved processes to address uncertainty relating to climate change, or a national or State approach to agreed assumptions to be used. Both Sydney Water and WaterNSW (our major bulk water supplier) use consistent, recent modelling to enable us to understand likely climate impacts on yield and demand. However, different climate models still present different outcomes for Sydney. This inconsistency makes planning more difficult.
- further consideration and use of evidence-based non-market costs and benefits, such as valuations of the social impact of water restrictions and river health benefits. The continuation of this approach can provide a sound evidence base for utilities and other water policy makers. At the national level, guidance on how to best conduct and use evidence of non-market benefits in water planning, as well as advice on the level of evidence required to justify decisions, would be useful.

3.7 Conclusion

While strong advances have been made in urban water reform in the last few decades, there are still opportunities for further improvement and refinement. We support the priority areas for reform outlined in this submission being included in any renewed NWI and accompanying action plans.

Appendix A Progress to date

It is generally accepted that national water reform to date has mainly focused on the rural water sector, rather than urban water. This was reasonable and sensible, given the need for reform was much greater in rural areas over the last twenty years. Indeed, this remains true today.

In the Sydney context, the NWI has largely provided guidance rather than being the driving force behind reforms. Progress against most urban water reform objectives was largely achieved or driven by internal factors already in motion within the Sydney context, rather than the NWI actions set out in 2004. Some examples are provided below.

A.1 Economic regulation and efficiency gains

Sydney Water has been corporatised and subject to independent price regulation from the mid-1990s. Since that time, major efficiency gains have been made in areas such as capital works procurement and delivery, price reform, human resource management, energy use and efficiency, and the adoption of emerging technologies. Improvements have been realised largely through better use of contestability and competitive tender processes in procurement and outsourcing.

In total, we outsource around 90 per cent of our capital expenditure and 70 per cent of our operating expenditure. For example, we make extensive use of the private sector to deliver:

- all major capital projects
- water treatment services under 'build, own, operate' contracts
- mechanical and electrical functions, which were fully outsourced in 2012
- other services, such as meter reading.

Where possible, we seek to keep functions in-house, while still achieving efficiency goals. Under our 'Meet or Beat the Market' project, we set agreed targets within the business, after benchmarking performance against the market. In three years, we achieved an 18.3 per cent reduction in civil maintenance unit costs, bringing productivity in line with leading market practice.

While we will continue to seek new efficiencies going forward, such as through improved procurement and tendering processes, the nature of gains already made means that the opportunity for future step changes in these areas is limited.

A.3 Economic level of water conservation

Another area of strong progress in the Sydney context is water conservation and water efficiency. Water use has remained at record lows since 2008, well past the end of the Millennium drought, and our customers have adopted water efficient practices as part of their everyday life. In a non-drought context, we are continuing to seek to manage water demand in a cost-effective way, as part of maintaining a sustainable supply-demand balance. An example of this is our new economic level of water conservation methodology.

In the past, regulatory requirements for water conservation have typically been in response to certain events, such as drought. Once imposed, the requirements often remain the same despite changes in the environment, technology and costs. This may lead to sub-optimal outcomes for customers and the broader community.

In its review of Sydney Water's *Operating Licence 2015-2020*, IPART proposed a new approach: Sydney Water must develop an economic level of water conservation (ELWC) methodology to replace existing water conservation targets. The aim was to replace fixed water efficiency (demand management) and leakage targets with a more flexible methodology, to drive sensible outcomes in a variety of circumstances (as opposed to the particular set of circumstances at the time of a licence reset). IPART specified that the methodology had to address water leakage, water efficiency, and water recycling projects.

Sydney Water has developed a flexible, forward-looking approach that seeks to provide the right investment incentives given the circumstances at the time decisions are being made and which are appropriate for the type of water conservation project (eg, short-term versus long-term, or tactical versus strategic investments). The ELWC methodology compares the levelised cost of a water conservation project against the value of water (also known as the marginal cost of water).

Investments for different types of projects are considered against different values of water. For example, projects that deliver water savings over a 20-year life would be assessed against the retail price of water (a proxy for the long run marginal cost). In this way, a water conservation project can proceed if it reduces the total cost of the portfolio of measures needed to meet anticipated demand over the long term (20+ years).

Shorter-term investments are assessed against a value of water that varies based on dam storage levels. At higher dam levels, water is relatively abundant and the marginal cost will largely reflect financial costs. As dam levels fall, the probability of triggering higher costs will increase. This includes the use of more expensive water sources such as the desalination plant, but also other measures, such as water use restrictions, that could trigger wider social costs. Because the value of water is a probability-weighted estimate of future dam levels, the level of water conservation investment can start to increase as dam levels fall, achieving water savings before conditions of water scarcity emerge.

Applying the Economic Level of Water Conservation – a hypothetical example

Depending on the context, water conservation can provide significant value for the community. For example, the 2017 Metropolitan Water Plan outlines the operating rules for the Sydney Desalination Plant. When dam storages fall below 60 per cent, the desalination plant must operate to maximise its supply of drinking water to Sydney Water's area of operations.

There are periods in the historical record where it is likely that reducing leaks could have avoided dam storages falling below the restart trigger for the desalination plant. Had the Sydney Desalination Plant existed in the mid- to late-1990s, using the ELWC methodology to tailor Sydney Water's water conservation activities may have resulted in savings of more than \$200 million (\$2016–17) in avoided restart, operating and shutdown costs.

