



SYDNEY COASTAL COUNCILS GROUP INC.

councils **caring** for the coastal environment

SUBMISSION

IPART Review of Sydney Water Pricing

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Introduction

We are the peak NSW Regional Organisation of Councils (ROC), and the third largest based upon population¹, representing 15 Sydney coastal councils (www.sydneycoastalcouncils.com.au). We have 25 years' experience in leading sustainable coastal management and harness the individual and collective knowledge of our Member Councils, a suite of technical and academic experts as well as other stakeholders. Engagement is undertaken through a range of communications including meetings, workshops, information sessions and publications. Accordingly, we are able to provide unique insights drawing upon the technical, experiential and local knowledge of our Members.

We have a great interest in the pricing and regulation of water services. Over the last 25 years we have worked in partnership with Sydney Water and other State agencies to promote an integrated management approach across water, wastewater and stormwater services. As such, we welcome the opportunity to contribute to this Review.

Our submission focuses on the area in which we have specific knowledge and expertise, namely the urban coastal and estuarine environment. General comments are provided, followed by specific comments under the following key areas:

1. Capital expenditure
2. Potable water pricing
3. Wastewater pricing
4. Stormwater pricing
5. Accounting for climate change impacts
6. Water recycling.

We only make submissions where there is majority support amongst our Members on the issue of concern, however it should not be inferred that there is absolute consensus across all 15 Member Councils on the contents of this submission. In representing the majority position, we endeavour to maintain a regional, nonpartisan and long-term perspective on matters affecting our urban coastal environment.

General Comments

A 2007 global study of the "water footprints of nations" found that Australian households held the world's worst record for water consumption, despite our industry and farmers being relatively efficient. Published in the journal *Water Resources Management*, the study found that Australian households had a "water footprint" equivalent to 341,000 litres per person per year. Our water utilities and their regulators have a great opportunity (and moral obligation) to influence consumption through effective demand management.

Water pricing should be structured to promote efficient water use and continuous improvement to Sydney Water's environmental performance. Current pricing methodologies are heavily weighted towards economic factors, with inadequate consideration of environmental and social values. This creates disincentives for water use reduction, re-use and recycling initiatives, as their short-term economic return is not as favourable as conventional consumption patterns.

Pricing principles should be developed in consultation with key stakeholders and should encompass environmental and social values, not simply economic values. These principles

¹ Gooding A 2012, *A Comparative Analysis of Regional Organisations of Councils in NSW and Western Australia*, Australian Centre of Excellence for Local Government, University of Technology Sydney.

should apply across all of Sydney Water's services, including water, wastewater and stormwater. At a minimum, the following principles should be advanced:

- 'User pays': pricing should, as far as possible, reflect actual usage, so that customers can understand the cost of their consumption and realise benefits from reduced consumption. Nonetheless, a fixed service charge should be retained to reflect the costs of providing water services.
- 'True cost': pricing should reflect the 'true cost' of water services, including lifecycle costs associated with the capture, production, transport and disposal or re-use of water. The 'true cost' should also reflect scarcity costs (those due to resource over-use and depletion) and environmental costs (those that water supply place on the environment and its ecosystems).

It is imperative that, as part of this review, IPART work with Sydney Water to investigate methodologies for integrating environmental and social values into the pricing for water services.

Recommendation

- 1 IPART work with Sydney Water to investigate methodologies to integrate environmental and social values into the pricing of water services.

Capital expenditure (Issues 9, 10, 13)

Over 2012-16, Sydney Water forecasts it will have spent \$2.6 billion on capital expenditure, which is \$199 million (or 7%) less than allowed by IPART. This underspend would be acceptable if Sydney Water had world-class infrastructure in exceptional condition, however in reality, many parts of Sydney Water's infrastructure are sub-standard and Sydney Water continues to breach licence conditions due to asset performance issues. Appropriate investment is needed to improve system performance and resolve long term legacy issues, such as the continuing occurrence of wet weather overflows and the raw sewage outfalls at Vacluse, Diamond Bay and Diamond Bay South. For at least two decades now, the community has sought action to address the unacceptable discharge of approximately 5.1 megalitres of raw untreated sewage in these locations. In response to such issues, Sydney Water regularly points to funding constraints to justify their inaction, directly contradicting the position put forward in their pricing proposal.

A further contradiction is found in Sydney Water's proposal to the 2011 pricing review, in which they held the position that steady increases in prices were required so that large costs for the maintenance and renewal of assets were not imposed on future generations. Sydney Water owns and operates 23,817km of sewers, 674 pumping stations in service and 29 sewage treatment plants.² Parts of the sewage system are over 100 years old, especially in areas of eastern Sydney where some sewer lines are hand-built brick and particularly susceptible to deterioration. These older assets have varying levels of integrity and performance and are under increasing pressure from continual deterioration, population growth and the impacts of climate change. In the next 20 years Sydney's population will grow by 1.6 million people³ and oncoming climate change risks will exacerbate stresses on infrastructure.

In this context, we are concerned that the amount proposed by Sydney Water for capital expenditure is significantly less than the actual amount required to achieve and maintain a

² National Water Commission 2010, *National Performance Report 2009-10 Urban Water Utilities*

³ NSW Government 2014, *A Plan for Growing Sydney*.

socially and environmentally acceptable level of service into the future. We support IPART's proposal (in response to Issue 10) to engage an expert consultant to conduct a strategic review of Sydney Water's long-term investment plans and asset management systems and practices. We recommend that this review provide an opportunity for public consultation and specifically assess the community's willingness to pay for continuity in service levels and improved environmental outcomes.

Recommendation

- 2 IPART engage an expert consultant to conduct a strategic review of Sydney Water's long-term investment plans and asset management systems and practices, and specifically assess the community's willingness to pay for continuity in service levels and improved environmental outcomes.

Potable water pricing

Customer incentives (Issues 33, 34, 41, 42, 44)

We are concerned that lowering prices for water (Issue 41, 44) will lead to behavioural shifts towards increased water consumption, especially since the proposed savings are apportioned more heavily to the variable (usage) component of the price (-13.9%) than the fixed (service charge) component (-4.9%). This will potentially negate previous efforts by Sydney Water and other agencies, including Local and State Governments, to raise community awareness on the importance of water conservation.

While we recognise the financial pressures on ratepayers, Sydney Water prices are less than the average prices set by other major water utilities across the nation.⁴ Furthermore, in 2013-14 Sydney Water residential customers were supplied the second highest volume of water per property of the nation's 13 major water utilities.⁵ Therefore our city exhibits some of the highest levels of water use in a country that holds the world's worst record for water consumption, while enjoying lower than average prices. In this context, we argue that our water utilities and their regulators have a responsibility to reduce high levels of water consumption through effective demand management.

We know the community is responsive to price and regulatory signals. The millennium drought restrictions saw a 10% reduction in water consumption. As such, rather than take as granted Sydney Water's assumption that water demand will increase by 4% over the next pricing period (Issue 33), Sydney Water and IPART should be considering ways to offset this increase through appropriate price signals and related demand management activities. Lowering the price of water will have the opposite effect and most certainly result in an increase in water consumption.

In addition, we support water usage charges being set with reference to the long-run marginal cost (LRMC) of water supply (Issue 42), noting IPART's comment that this "sends customers an efficient, long-run scarcity signal, which helps convey the long-run cost implications of water usage". We note that Sydney Water modelled a variety of scenarios to determine a suitable LRMC and that IPART's preliminary modelling returned a LRMC lower than current usage charges. In any event, we recommend a higher-cost scenario is used when determining the LRMC, so as to account for unexpected changes and insure customers against sharp price rises. In recognition of the uncertainty associated with

⁴ Based on 2013-14 data from the Bureau of Meteorology (2015) *National Performance Report 2013-14: Urban Water Utilities*, p. 37.

⁵ Bureau of Meteorology (2015) *National Performance Report 2013-14: Urban Water Utilities*, p. 24.

customer demand, we also support IPART's proposal to provide for a demand volatility adjustment mechanism (Issue 34).

Recommendations

- 3 The price of potable water should incentivise ongoing water efficiency.
- 4 Sydney Water and IPART consider ways to offset the projected increase in water demand through appropriate price signals and related demand management activities.
- 5 Water usage charges be set with reference to a higher-cost scenario long-run marginal cost (LRMC) of water supply.
- 6 IPART continue including a provision for a demand volatility adjustment mechanism to mitigate the potential for an over- or under-recovery of revenue resulting from differences between forecast and actual water consumption.

Risk management considerations (Issue 5)

According to Sydney Water, just over 30% of the average savings it proposes to pass on to customers is driven by efficiency savings within its control, while almost 70% stems from external factors beyond its control. Given these figures, it seems imprudent of Sydney Water to pass on 100% of the cost savings.

Key external factors driving Sydney Water's justification for cost reduction include savings from the current economic environment, notably lower interest rates, and an expectation of lower costs in buying water (Issue 5). However as interest rates can vary quite dramatically over a four year period, this does not seem a strong justification for locking in lower customer prices. In addition, we expect that the costs of buying water will gradually increase over time, as water availability becomes increasingly variable through changing weather patterns associated with climate change. Similarly, extreme weather events such as floods and bushfire, which impact on water quality and thus water purification costs, are expected to increase in severity and frequency. Increased development and population pressures can also be expected to result in greater catchment run-off, further adding to the costs of water purification. For these reasons, we are heavily sceptical of Sydney Water's assumptions of reduced costs of buying water. While there may be a short-term decrease, it can be reasonably expected that over the longer-term these costs will only continue to rise. Therefore, reducing costs now will presumably lead to an abnormally large increase for customers in future pricing periods.

To appropriately manage these risks, and minimise price fluctuations for customers, a sizeable buffer of Sydney Water's cost savings should be retained to deal with unexpected short-term developments that will affect their pricing, such as economic shifts or extreme weather events. In the longer-term, Sydney Water should direct a fixed portion of cost savings to establish a 'sinking fund' for major asset renewal and other significant capital works, including adaptation to climate change impacts.

Recommendations

- 7 IPART determine an appropriate portion of Sydney Water's cost savings to be retained to deal with unexpected short-term developments that will affect their pricing, such as economic shifts or extreme weather events.

- 8** IPART require that Sydney Water direct a fixed portion of cost savings to establish a 'sinking fund' for major asset renewal and other significant capital works, including adaptation to climate change impacts.

Bulk water costs associated with pumping from the Shoalhaven River (Issue 6)

We have concerns regarding the ongoing appropriateness and sustainability of pumping from the Shoalhaven river system to top up Sydney's water supplies. This energy-intensive and environmentally questionable practice should be reviewed as part of the pricing reviews for Sydney Water and WaterNSW. The review should address the environmental sustainability of this practice and evaluate the necessity to begin it at such high dam levels (75% capacity). IPART should also compare the energy intensity and costs to customers of pumping from the Shoalhaven River versus activating the Sydney desalination plant.

Recommendations

- 9** IPART commission a review of the environmental sustainability of pumping bulk water from the Shoalhaven River and evaluate the necessity to begin this activity at 75% dam levels.
- 10** IPART compare the energy intensity and costs to customers of pumping from the Shoalhaven River versus activating the Sydney desalination plant.

Transparency of cost for desalinated water (Issue 43)

We support the proposed increase in water usage charges to recover additional costs incurred when the Sydney Desalination Plant is activated, as this will make the costs of drought-response more transparent for customers and encourage water efficiency. We further seek that IPART work with Sydney Water, the Metropolitan Water Directorate and other relevant stakeholders to review the trigger points for when the desalination plant is activated. The current trigger of 70% dam capacity seems very high, noting the significant environmental and economic costs associated with starting the plant.

Recommendations

- 11** IPART increase the water usage charge to recover additional costs incurred when the Sydney Desalination Plant is activated.
- 12** IPART work with Sydney Water, the Metropolitan Water Directorate and other relevant stakeholders to review the trigger points when the desalination plant is activated.

Wastewater pricing (Issues 13, 37, 46, 50)

Expenditure related to environmental regulation (Issue 13)

Sydney Water notes that new and revised Environment Protection Authority (EPA) standards require a \$158 million investment, mainly to reduce wastewater discharges to waterways and manage wet weather overflows. We support IPART's proposal to engage an expert consultant to evaluate this proposal, as we consider that this amount is greatly underestimated. Given ongoing deterioration of assets, the continuing occurrence of wet and dry weather overflows, licence breaches and substandard levels of treatment at Sydney's sewage treatment plants, we contend that a significant increase in funding

allocated to improve the environmental performance of Sydney Water's wastewater systems is needed. Concurrently, the EPA should be tightening its licence conditions for Sydney Water, to bring it in line with international best practice.⁶

The current (advanced) primary treatment levels at the three major ocean STPs (Malabar, Bondi, Manly) are environmentally and socially unacceptable in 2015. All other major plants in our nation's capitals, other than Darwin, have secondary or tertiary treatment before discharge. Almost 25 years ago, the European Union agreed to a mandate that major plants across 27 European countries have at least secondary and preferably tertiary treatment. The USA has a requirement for major plants to discharge at least secondary treated sewage and there are similar examples in New Zealand, Singapore and Japan. This puts Sydney amongst the worst performers for sewage treatment in the developed world. As such, we implore IPART and Sydney Water to develop a long-term investment plan to introduce tertiary treatment at all Sydney sewage treatment plants.

Recommendations

- 13 IPART engage an expert consultant to evaluate Sydney Water's expenditure related to environmental regulation, in line with international best practice.
- 14 IPART partner with Sydney Water to develop a long-term investment plan to introduce tertiary treatment at all Sydney sewage treatment plants.

Wastewater Usage Charges (Issue 35, 45, 46)

We support a user-pays approach to wastewater pricing as this will provide better price signals for more water efficient behaviours. Wastewater usage charges do not currently apply to residential customers. The costs arising from wastewater discharge are recovered through a fixed service charge based on an assumed 150kL of discharge per year, per customer. Introducing a usage charge that reflects actual volumes discharged is consistent with the user-pays principle and would incentivise water efficiency. It may also encourage greater re-use, such as grey water recycling. Customers with low discharge would also benefit from a reduction in their overall wastewater bill.

We note that Sydney Water have used water consumption to forecast chargeable wastewater volumes for non-residential customers (Issue 35). However this is not a reliable indicator for households and dwellings that have onsite water re-use schemes, such as grey water systems. Relying on water consumption as an indicator of wastewater discharge may have the unintended consequence of discouraging water re-use schemes and on-site treatment and disposal. While metering discharge may be unfeasible, IPART and Sydney Water should investigate suitable methodologies for forecasting levels of wastewater discharge.

Recommendations

- 15 IPART and Sydney Water develop a user-pays approach to wastewater pricing.
- 16 IPART and Sydney Water investigate suitable methodologies for forecasting levels of wastewater discharge.

⁶ For further information on this issue, refer to our recent submission to the EPA on Sydney Water's sewage treatment Environment Protection Licences:
<http://www.sydneycoastalcouncils.com.au/sites/default/files/SCCG-Submission-on-Sydney-Water-Sewage-Treatment-Environmental-Operating-Licences.pdf>

Discharge allowance for non-residential customers (Issue 37)

Sydney Water has proposed fixing the discharge allowance for non-residential customers at the current level of 300kL per year. To the contrary, we support IPART's position that the discharge allowance should continue to be reduced for non-residential customers to 150kL per year, as proposed in the 2012 Determination. As IPART notes, this would remove cross subsidies whereby small businesses discharging less than 150kL per year are currently cross-subsidising medium to large business discharging more than that amount.

Recommendation

- 17** IPART reduce the wastewater discharge allowance for non-residential customers to 150kL per year.

Wastewater Service Charges (Issue 47)

We strongly question the proposal to reduce wastewater service charges to the extent proposed by Sydney Water. Residential service charges are proposed to decrease by 4.9% in 2016-17 and then remain constant, while non-residential charges are proposed to decrease by 44.4%. Given the major infrastructure challenges facing the wastewater network (as discussed above), we would consider that service charges should remain constant or increase to cover maintenance and renewal costs.

Recommendation

- 18** IPART review the proposed reduction in wastewater service charges, noting the significant infrastructure challenges facing the wastewater network.

Trade Waste (Issue 50)

Trade waste pricing should incentivise reductions in the production of trade waste and encourage greater at-source treatment. The methodology for determining trade waste charges should also be reviewed to ensure costs are consistent with comparable services for residential customers. We have heard anecdotal evidence that comparable services for residential customers may be charged at higher rates than trade-based customers. This anomaly should be reviewed to ensure consistent pricing.

Recommendation

- 19** IPART review the methodology for determining trade waste charges, with a view to encouraging reduced waste production, greater at-source treatment and consistent pricing.

Stormwater pricing (Issue 48, 49)

Sydney Water has proposed that stormwater drainage charges decrease by 2.9% in each year of the determination period. According to Sydney Water, this equates to approximately 11% in real terms over the price path. Our position on stormwater pricing is consistent with that on water and wastewater pricing outlined above – namely that with ageing infrastructure, increased climate variability and climate change risks such as sea level rise and inundation, the costs to operate and maintain these assets can only be expected to rise. As such, we consider that an increase in stormwater drainage charges is justified.

Noting the issue of area-based charges (Issue 49), we support pricing based on the percentage of impervious area, as this considerably affects the volume of stormwater entering the drainage network. Pricing based on impervious area will also incentivise water sensitive urban design (WSUD) projects, such as rainwater gardens.

Recommendations

- 20 IPART review the methodology for determining stormwater drainage charges, noting the ongoing cost pressures of ageing infrastructure, increased climate variability and climate change risks such as sea level rise and inundation.
- 21 IPART investigate implementation of stormwater drainage pricing based on the percentage of impervious area and other methodologies that encourage water sensitive urban design.

Accounting for climate change impacts

In its [Climate Change Adaptation Program](#), Sydney Water acknowledges key climate change risks that will impact on water supply and demand, including:

- higher temperatures, lower (and potentially less regular) rainfall and higher evaporation, leading to lower inflows into dams
- higher temperatures and longer dry periods leading to increased customer demand
- more favourable conditions for algal blooms in bulk water supplies.

In addition, the Program identifies a series of climate change risks to infrastructure, including:

- more frequent and intense extreme events
- sea level rise inundating low lying assets
- higher temperatures and lower flows impacting on drinking water quality and sewer corrosion
- drier soils damaging buried assets and encouraging tree root invasion and increasing critical main breaks.

In the same document, Sydney Water notes that almost 60% of the identified climate change risks are high priority and in need of further investigation. This would suggest additional resources are needed for investigation and subsequent mitigation and adaptation activities. In this context, Sydney Water's proposal to reduce capital expenditure and revenue collected through pricing should be seriously reconsidered.

Altered rainfall patterns combined with increased storm intensity will require existing standards relating to performance, maintenance and expenditure over infrastructure life cycles to be re-assessed. Greater consideration of the interconnected nature of water infrastructure is also needed. In 2012 we completed a major partnership project with Sydney Water (funded by the Australian Government) on this issue, entitled [Demonstrating Climate Change Adaptation of Interconnected Water Infrastructure](#). One of the key findings from the project was that:

Existing climate threats require action as well as future threats: Almost all of the case studies identified that current climate, combined with urban development and an ageing asset base, are already impacting the performance of interconnected water infrastructure systems. However the uncertainty surrounding climate change is impeding the decision making process in responding to these existing threats. For the most part, the case studies focused on interconnected water infrastructure systems which are already impacted by the existing climate and for which immediate action

is required. The consideration of climate change in the response is critical, but the optimum point at which adaptation should occur, from an economic analysis perspective, may have already passed.

As such, adaptation responses must be delivered in a coordinated manner to ensure that a 'whole of system' approach, including supporting auxiliary infrastructure, is used to identify vulnerabilities and adaptation responses at lowest cost to society and with minimal disruptions to customers.

We note that Sydney Water has demonstrated considerable leadership in this area through involvement in projects such as:

- The Sydney Water Infrastructure and Operations Climate Change Risk Assessment
- Climate Change Adaptation Tool for the Water Industry (in partnership with Water Services Association of Australia)
- [Demonstrating Climate Change Adaptation of Interconnected Water Infrastructure](#) (in partnership with the SCCG, UNSW Water Research Laboratory and OEH).

As two of these initiatives have been funded through external Government programs, it is important that Sydney Water be allocated ongoing funding to support continuing investigation of the impacts of climate change on water infrastructure and water use, as well as possible solutions. This could be facilitated if a percentage of Sydney Water's revenue was allocated to research and activities that build the resilience of Sydney Water and its customers to the impacts of climate change.

Recommendation

- 22** IPART allocate a percentage of revenue to support Sydney Water's Climate Change Adaptation Program, with a focus on 'whole of system' adaptation.

Water recycling initiatives

Many residential and commercial uses of water – such as cleaning, toilet flushing and irrigation – do not require potable water, yet in most instances potable water is all that is available to customers. The concept of 'fit-for-purpose' water involves treating water only to the level needed for the purpose required. Water recycling initiatives offer a significant opportunity to promote 'fit-for-purpose' water and reduce our reliance on potable water sources. However the present methodologies imposed on Sydney Water by IPART for the evaluation of water recycling initiatives are a significant barrier to their implementation. Current least cost and levelised cost evaluation methods take into account economic costs but exclude assessment of environmental and social benefits, resulting in an incomplete cost benefit analysis and comparison between projects. This results in three significant issues:

- Impacts on the environment, as well as environmental and social benefits, from recycled water initiatives are not being accurately accounted for
- The strategies used by Local Government and Sydney Water to evaluate projects vary considerably
- Partnerships between Sydney Water and Local Governments to deliver water recycling projects are hampered.

Councils have long considered environmental and social benefits, as well as community support, in the evaluation of water recycling and re-use activities. In contrast, Sydney Water has applied economic evaluation methods stipulated by IPART, taking into account factors such as cost per kilolitre and avoided costs. This disparity in evaluation methodologies has resulted in projects, highly valued by Councils and their residents for their environmental or

social outcomes, receiving no financial or technical support from Sydney Water due to their perceived limitations economically. As such, we recommend that IPART work with Sydney Water to develop a methodology that integrates environmental and social benefits into the evaluation of water recycling initiatives.

Recommendation

- 23** IPART work with Sydney Water to develop a methodology that integrates environmental and social benefits into the evaluation of water recycling initiatives.

Summary of Recommendations

- 1** IPART work with Sydney Water to investigate methodologies to integrate environmental and social values into the pricing of water services.
- 2** IPART engage an expert consultant to conduct a strategic review of Sydney Water's long-term investment plans and asset management systems and practices, and specifically assess the community's willingness to pay for continuity in service levels and improved environmental outcomes.
- 3** The price of potable water should incentivise ongoing water efficiency.
- 4** Sydney Water and IPART consider ways to offset the projected increase in water demand through appropriate price signals and related demand management activities.
- 5** Water usage charges be set with reference to a higher-cost scenario long-run marginal cost (LRMC) of water supply.
- 6** IPART continue including a provision for a demand volatility adjustment mechanism to mitigate the potential for an over- or under-recovery of revenue resulting from differences between forecast and actual water consumption.
- 7** IPART determine an appropriate portion of Sydney Water's cost savings to be retained to deal with unexpected short-term developments that will affect their pricing, such as economic shifts or extreme weather events.
- 8** IPART require that Sydney Water direct a fixed portion of cost savings to establish a 'sinking fund' for major asset renewal and other significant capital works, including adaptation to climate change impacts.
- 9** IPART commission a review of the environmental sustainability and economic costs of pumping bulk water from the Shoalhaven River and evaluate the necessity to begin this activity at 75% dam levels, considering the contributions of the desalination plant at Kurnell.
- 10** IPART compare the energy intensity and costs to customers of pumping from the Shoalhaven River versus activating the Sydney desalination plant
- 11** IPART increase the water usage charge to recover additional costs incurred when the Sydney Desalination Plant is activated.

- 12** IPART work with Sydney Water, the Metropolitan Water Directorate and other relevant stakeholders to review the trigger points when the desalination plant is activated.
- 13** IPART engage an expert consultant to evaluate Sydney Water's expenditure related to environmental regulation, in line with international best practice.
- 14** IPART partner with Sydney Water to develop a long-term investment plan to introduce tertiary treatment at all Sydney sewage treatment plants.
- 15** IPART and Sydney Water develop a user-pays approach to wastewater pricing.
- 16** IPART and Sydney Water investigate suitable methodologies for forecasting levels of wastewater discharge.
- 17** IPART reduce the wastewater discharge allowance for non-residential customers to 150kL per year.
- 18** IPART review the proposed reduction in wastewater service charges, noting the significant infrastructure challenges facing the wastewater network.
- 19** IPART review the methodology for determining trade waste charges, with a view to encouraging reduced waste production, greater at-source treatment and consistent pricing.
- 20** IPART review the methodology for determining stormwater drainage charges, noting the ongoing cost pressures of ageing infrastructure, increased climate variability and climate change risks such as sea level rise and inundation.
- 21** IPART investigate implementation of stormwater drainage pricing based on the percentage of impervious area and other methodologies that encourage water sensitive urban design.
- 22** IPART allocate a percentage of revenue to support Sydney Water's Climate Change Adaptation Program, with a focus on 'whole of system' adaptation.
- 23** IPART work with Sydney Water to develop a methodology that integrates environmental and social benefits into the evaluation of water recycling initiatives.