Submission to the Productivity Commission Issues Paper:

Barriers to effective climate change adaptation

June 2012

1. Executive summary

The Water Services Association of Australia (WSAA) welcomes the opportunity to make a submission to the Productivity Commission's (Commission's) draft report on *Barriers to effective climate change adaptation*.

WSAA is the peak body of the Australian urban water industry. Its members and associate members provide water and wastewater services to approximately 16 million Australians and many of Australia's largest industrial and commercial enterprises.

The impacts of climate change are already being felt in Australia, and with the water cycle highly sensitive to climate change the water industry is facing an unprecedented challenge.. The changing climate present risks to all facets of the urban water cycle, from the sourcing and supply of water, to the treatment and management of wastewater. It is likely that climate change will deliver many of its impacts through floods, droughts and severe storms. Water resources will change in both quantity and quality, and water, stormwater and wastewater facilities infrastructure will face a greater risk of damage. The effect of climate change will manifest from difficulties in operations to disrupted services and increased cost of water and wastewater services.

While certain actions being taken by urban water utilities may help to reduce their exposure to climate change, there is an evident need to address climate vulnerability more systematically. Some of the measures currently being implemented primarily address short-term concerns. For many utilities longer term actions may often appear to be unaffordable or unfeasible given perceived complexity, a lack of scientific information relevant to the urban environment, or a lack of coordination with other authorities related to issues such as resource protection and flooding.

Many WSAA members have been focusing on climate change adaptation over and above traditional water supply issues as they will need to adapt their infrastructure and operations to cope with the future impact of climate change.

This analysis has been developing around the key elements of the business cycle i.e. (strategic and tactical) planning needs, design and installation, operations and maintenance, customer service and business continuity. WSAA members are focused on identifying what climate change might mean for these elements.

The next stage of the water industry's adaptation work will need to include consideration of how the urban water sector can contribute to the overall community response and adaptation to climate change, especially in relation to:

- **Asset management and maintaining built infrastructure**: the large asset base and long-term horizons for decision-making make asset management and maintenance key issues for water utilities owner/operators. This is compounded by the ageing of infrastructure
- **Water quality and quantity**: new climate conditions and changed infrastructure configurations will require innovations in water treatment

- **Cities of the future**: our urban and social resilience – particularly in the face of population growth and changing demographics – will be a result of integrated and comprehensive planning.

WSAA's key conclusions and recommendations in responding to the Commission's Draft Report are:

Effective adaptation to climate change

- Climate change presents risks to all facets of the urban water cycle not only the effect of drought on supply.
- Water utilities are working to assess the risks climate change impacts pose to their business and to implement climate change adaptation planning.
- As regulated authorities, water utilities must select climate change adaptation responses that are cost effective, defensible and representative of sound investment.
- The definition of climate change adaptation should include reference to both proactive and reactive adaptation responses.
- WSAA agrees with the Commission's risk management approach to adaptation planning. It will achieve an effective approach to climate change adaptation which is transparent and flexible in considering the risks involved.
- Australian utilities have developed approaches to the immediate challenges posed by climate change, and are continuing to develop strategies for the long term impacts of climate change. Approaches include: responding to water scarcity with infrastructure investment programs, water conservation and efficiency measures. Strategic responses include:asset management strategies; planning for urban development; monitoring for health impacts; vulnerability research.
- WSAA and its members are undertaking the AdaptWater project, which will deliver a climate change adaptation tool for the Australian urban water industry. AdaptWater will capture and quantify the complexity of modern water utilities' economic, social and environmental performance requirements and integrate the effects of evolving direct and indirect climate change hazards.
- WSAA acknowledges that there is still a great deal of uncertainty surrounding the precise nature and timing of climate change impacts however WSAA does not advocate stalling the implementation of climate change adaptation strategies while waiting for new approaches to address uncertainty.

Barriers to adaptation

- WSAA agrees in principle to the Commission's classification of barriers. WSAA proposes an additional barrier category to address legacy issues where barriers to climate change adaptation occur as a result of existing infrastructure and development.

  Legacy issues are a potential barrier for climate change adaptation of infrastructure. Climatic shifts are expected within the design life of infrastructure, and existing infrastructure and development which is either in place in low lying coastal and floodplain areas or is buried is likely to be at risk. Adapting this infrastructure and development to climate change may require relocation of assets which are substantial in value, size and delivery of services to customers.

In some cases, governments may in the future decide to cease or move development out of a particular 'at risk' area. It will be essential that utilities are engaged in this process to avoid unnecessary adaptation of existing assets.

- Market failures which may inhibit effective climate change adaptation include: investment constraints, the insurance market, and the quantification of climate change impacts.
- Implementing responses to climate change challenges will require collaboration of water utilities with regulators and policy makers to develop the appropriate market, regulatory and planning structures.
- Examples of policy or regulatory barriers include: short-term regulatory horizons; unclear government roles and responsibilities; inconsistent policies; lack of coordination in response to climate change impacts; network infrastructure shared risks; information gaps; and climate data access issues.
- WSAA recommends the organisational barriers classification should be extended to include multi-jurisdictional and supply chain barriers, as effective climate change adaptation will require multiple stakeholders (including government agencies and government owned corporations) to consider cross cutting issues.
- A key organisational barrier identified by WSAA members is the lack of skills and capacity in the private and public sector to prioritise, develop and determine effective climate change adaptation measures.

Addressing adaptation barriers

- Consistent information and guidance from governments on climate change impacts and appropriate methodologies for climate change quantification and climate change adaptation is essential for effective adaptation.
- Infrastructure owners need support in determining the adequate value for their properties and assets for insurance purposes.
- Clarity is required regarding the process, ownership and timelines for updates to design standards.
- To ensure the water industry is well placed to adapt to climate change the framework for economic regulation needs to ensure prices are set taking into account adaptation measures.
- In some cases the most effective climate change adaptation measures for a water business or piece of infrastructure will be non-structural, and may include changes to environmental standards or levels of service. Regulators will need to be flexible in their frameworks to accommodate potential changes.
- A review of existing climate change data available to federal, state and local governments is needed, and information should be then made freely available and centrally located for easy access.

Setting priorities for reform

WSAA and its members consider the following reform options to be priorities:

- A coordinated response to climate change
- Revision to regulatory frameworks to consider climate change impacts and adaptation responses

- Access to complete and consistent data
- Clarification of the roles and responsibilities of governments
- Consistent policies, methodologies and design standards
- Support to infrastructure owners in determining adequate value for insurance purposes

This submission draws on WSAA's recently released report 'Climate Change Adaptation in the Australian Urban Water Industry' This document is available as a free download from WSAA's website www.wsaa.asn.au

2. Comments on the draft recommendations

Draft Recommendation	WSAA Comment
Assessing reforms and setting priorities **Draft recommendation 4.1** Reforms to address barriers to effective risk management in the current climate should be implemented without delay, where they are likely to deliver net benefits. In relation to barriers to adaptation to uncertain future climate trends, the case is less clear. • Where a reform has low up-front costs and potentially large benefits, albeit with long time periods between the costs being incurred and the benefits being received, there could be a case for preparatory action. The case is likely to be stronger if the reform will deliver benefits under a range of climate change scenarios. • Where measures have high up-front costs, the community is likely to benefit by deferring high –cost options until better information becomes available.	Recommendation 4.1 is supported. WSAA does not advocate stalling the implementation of climate change adaptation strategies while waiting for new approaches to address high levels of uncertainty. Nor do we consider waiting to respond to actual impacts an appropriate option for achieving effective adaptation. To address this, it is important that climate change is communicated clearly in the terms of potential range of probabilities rather than focusing simply on uncertainty. Any adaptation management framework must be flexible and allow science and knowledge to be updated and incorporated as they are refined over time. Multiple approaches can be used in parallel to inform decision making in the absence of certainty (e.g. real options analysis, scenario analysis, Monte Carlo techniques, and multi-criteria decision making). There have been suggestions that uncertainty can be reduced by further climate research. WSAA and its members are strong supporters of research aimed at improving our understanding of climate variability and change and the implications for our water, sewerage and drainage systems. However, while there will always be uncertainty in the climate science, this uncertainty should not be interpreted as an opportunity to ignore or delay assessment of risks and the planning of adaptation activities. While it may be possible to quantify and describe uncertainties using various techniques, how decision makers and communities respond to this uncertainty is less easily resolved.
Building adaptive capacity **Draft recommendation 5.1** Australian governments should implement policies that help the community deal with the current climate by improving the flexibility of the economy. This would also build adaptive capacity for dealing with future climate change. This includes reforms to: • Taxes that influence the way resources are used such as land tax exemptions and conveyancing duty, which could inhibit the	WSAA supports this recommendation. Climate change adaptation requires longer planning and investment horizons then currently considered by regulators. The regulators are not currently considering the impact of climate change and it is unclear whether full cost recovery for adaptation will be acceptable and under what conditions. Investment and planning processes need to take into account longer timeframes when considering the benefits of capital investment.

mobility of labour, capital or both • Government transfers that reduce incentives to adjust to changing circumstances, such as the reforms recommended in the Commission's 2009 inquiry into drought support • Regulations that impose unnecessary costs or inhibit competition or flexibility and could impede climate change adaptation by reducing the ability of firms, households or other organisations to respond to changing circumstances, such as restrictions to water trading.	
Information provision **Draft recommendation 6.1** The Australian Government's initiative to improve the coordination and dissemination of flood-risk information should be expanded over time to encompass other natural hazards. Guidelines to improve the quality and consistency of risk information should be regularly updated and take climate change into account where feasible	WSAA agrees with recommendation 6.1. Current requirements in legislation, standards, guidelines, and policy documents are typically based on historical climate data and do not allow for increased peak temperatures, increased rainfall intensity, and other changing climate variables. There is a lack of information regarding climate change scenarios of design events that are permissible or the methodologies to apply them, and as a result organisations are going it alone. This risks inconsistent, and possibly inadequate, adaptation responses. One of the priority actions to come out of the WSAA Climate Change Adaptation Report was to: ***Build and share knowledge on water utilities' responses to historical events (particularly extreme events).***
Local Government **Draft recommendation 7.1** There is uncertainty about the roles and responsibilities for adaption by local governments, including in the areas of land-use planning, coastal management and emergency management. As a first step to clarifying these roles and responsibilities, State and Northern Territory governments should publish a comprehensive list of laws which delegate regulatory roles to local governments. This would assist state, territory and local governments to assess whether local governments have the capacity to effectively discharge their roles.	WSAA would welcome greater clarity about the roles and responsibilities for local government in relation to adaptation. The roles and responsibilities of governments in responding to climate change adaptation is poorly defined. For example, many climate change impacts are predicted on a state or national government level, but adaptation measures often need to be applied at a local government (or organisation) level. Should local government fail to implement adaptation measures appropriately, it is likely that state governments, and possibly the federal government, will be required to step in as insurer of last resort. Climate change adaptation is likely to be most

	effective with a coordinated response from governments. Currently, there is no forum to consider the collective cost of climate change on society across all sectors to ensure least cost adaptation responses. WSAA proposes water utilities should be included in any such forum or coordination mechanism.
Local Government **Draft recommendation 7.2** Uncertainty about legal liability of local governments is emerging as a barrier to effective climate change adaptation. State and Northern Territory governments should clarify the legal liability of local governments regarding climate change adaption matters and the processes required to manage that liability.	WSAA supports this recommendation. Across levels of government, there are inconsistent policies in place for climate change adaptation. This includes inconsistency between state and federal policies, adjacent states and local governments (for example, sea level rise allowances). There is a risk of inconsistency in climate change allowances across sectors and within businesses which may leave utilities open to scrutiny, as well as over or under investment. On the other hand, overly prescriptive guidelines about what to plan for could prevent potentially useful case-by-case assessments and identification of opportunities. It is unclear whether consistency is required in some or all cases.
Planning and building regulation **Draft recommendation 8.1** As a priority, land-use planning systems should be revised to ensure that they are sufficiently flexible to enable a risk management approach to incorporating climate change risks into planning decisions. In doing this, consideration should be given to: • Transparent and rigorous community consultation processes that enable an understanding of the community's acceptable levels of risk for different types of land use • The timeframe of risks and the expected life time of the proposed land use • The costs and benefits of different types of land use.	WSAA supports this recommendation, however our evidence suggests that communities have only limited ability to determine their own acceptable levels of risk, and that level will differ from community to community. We have found that given a choice, in this economy, most communities will choose the least cost option now and defer the costs for future.
Planning and building regulation **Draft recommendation 8.2** As a priority, the Building Minister's Forum should ensure that the National Construction Code and associated standards take climate change impacts into account. As soon as practicable: • The Building Minister's Forum should provide a formal response to the Australian Building Codes Board's 2010 review of the Building Code of Australia under climate change • The Australian Building Codes Board should	WSAA supports this recommendation and would welcome the appropriate inclusion of climate change impacts into the National Construction Code.

develop a formal work program that outlines its approach to incorporating climate change in the National Construction Code over time. This work program should reflect any formal government response to the 2010 review of the Building Code of Australia. The Australian Government should give consideration to the public funding requirements for the Australian Building Codes Board and Standards Australia to undertake this work.	
Planning and building regulation **Draft recommendation 8.3** The Council of Australian Government's Select Council on Climate Change should consider, as part of its adaptation work plan, appropriate responses to managing the risks of climate change to existing settlements in high-hazard risk areas	WSAA agrees with this recommendation. Climatic shifts are expected within the design life of infrastructure, and existing infrastructure and development which is either in place in low lying coastal and floodplain areas or is buried is likely to be at risk. Adapting this infrastructure and development to climate change may require relocation of assets which are substantial in value, size and delivery of services to customers. In some cases, governments may in the future decide to cease or move development out of a particular 'at risk' area. It will be essential that utilities are engaged in this process to avoid unnecessary adaptation of existing assets.
Emergency Management **Draft recommendation 10.1** The Australian Government should commission an independent public review of the Natural Disaster Relief and Recovery Arrangements. This review should commence as soon as possible and desirably produce a preliminary report by the end of October 2012. The review should consider whether the arrangements lead to inadequate infrastructure investments or insurance decisions, or reduce the incentives of state and territory governments to appropriately manage their risks. It should also examine alternative arrangements or funding models.	WSAA strongly supports this recommendation. There needs to be consideration given by governments as to how to best fill the gaps missed by the insurance industry to address uninsurable risks such as sea level rise. Infrastructure owners need support in determining the adequate insured value for their properties and assets for insurance purposes. This will ensure replacement 'as was' is possible taking pressure off any government catastrophe disaster fund (currently policy holders provide high level estimates for replacement cost or an expensive detailed professional valuation is required) and will allow insurers to calculate their aggregation exposure in a geographic area and better manage their retentions, probable maximum loss (PML) modelling and reinsurance placements for insurers solvency.
The role of insurance **Draft recommendation 12.1**	Eliminating government charges (Fire Service Levy, Stamp Duty and GST) from insurance premiums

State and territory taxes and levies on general insurance constitute a barrier to effective adaptation to climate change. State and territory governments should phase out these taxes and replace them with less distortionary taxes.	(currently approximately half the total cost) to increase the number of individuals and organisations with insurance cover. Removal of these charges will allow buyers to see the cost effectiveness of covering their risk and consequently are likely to be more receptive to purchasing insurance cover and encouraged to insure for the correct replacement value (under insurance as a way of minimizing premiums is a huge problem). For example, the Fire Services Levy is an impediment to the efficient operation of the insurance market. It is in society's interest that everyone has insurance, having in place what is a fairly large Fire Services Levy helps make insurance unaffordable for those who are less able to adapt to climate change and recover from extreme events.
The role of insurance **Draft recommendation 12.2** The Australian Government should only proceed with reforms that require all household insurers to offer flood cover if it can be demonstrated that the benefits to the wider community would exceed the costs. These benefits and costs should be assessed, and any reforms implemented, after barriers to effective climate change adaptation in other policy areas are addressed.	WSAA supports this recommendation. The cost-benefit analysis that is undertaken must include the wider environmental and social costs and benefits; not just financial. Mandatory insurance for property and business interruption, similar to a compulsory third party (CTP) scheme, would build a premium pool and spread the catastrophe risk, reducing social and economic impacts of climate change impacts.
The role of insurance **Draft recommendation 12.3** Governments should not subsidise premiums from household or business property insurance, whether directly or by underwriting risks. This would impose a barrier to effective adaptation to climate change.	WSAA supports this recommendation but only to the extent that the insurance bodies providing the cover ensure that the premiums are calculated on a full assessment of the environmental, social and financial costs and benefits (ie calculating and internalising the externalities)
Reform policies **Draft recommendation 13.1** The Australian Government should focus on national policy responses in areas such as emergency management, research and information provision. Existing agencies will have a role in managing policy responses in these areas. The Council of Australian Government's Select Council on Climate Change, and any successor, should coordinate policy responses in areas where cooperation between levels of government is required.	WSAA supports this recommendation. Climate change adaptation is likely to be most effective with a coordinated response from governments. As regulated authorities, water utilities must select climate change adaptation responses that are cost effective, defensible and representative of sound investment. Regulators need flexible frameworks to consider adaptation to climate change. This may include price setting which takes into account adaptation measures, and the ability to implement non-structural adaptation measures including changes to environmental standards or levels of service. A review of the research and information that is

	currently available to federal, state and local governments is needed, and information should be then made freely available and centrally located for easy access. Governments should ensure service providers, regulators, private businesses and other parties have clear objectives and accountabilities for responding to climate change adaptation which align with specified roles, functions, resourcing, and funding.