IRRIGATION AUSTRALIA

Inquiry into Australia's Urban Water Sector
Productivity Commission
LB 2 Collins Street East
MELBOURNE VIC 3165

18 May 2011

Dear Sir/Madam

Re: Submission Paper on Australia's Urban Water Sector

Thank you for the opportunity to make a submission on the Productivity Commission's Draft Report on Australia's Urban Water Sector.

Irrigation Australia Limited (IAL) is a national organisation representing the whole of Australia's irrigation industry, including both rural and urban irrigation. IAL has a broad membership base such as major water providers, corporations that supply irrigation equipment and organisations, consultancies and individuals who design, install, maintain and use irrigation systems, and educational and research institutions.

The urban irrigation industry has been particularly affected by urban supply demand imbalances in most major cities over the past decade and government responses such as water pricing. We are therefore well placed, and have a significant interest, to make a submission on Australia's urban water sector.

IAL's submission does not attempt to respond to each and every question raised in the Productivity Commission Draft Report, but centres around reforms needed to water planning and pricing to enable an objective of reliable urban water supplies to support healthy urban lifestyles. The submission is divided into Section 1 which provides background information and context on why reform would be beneficial for the urban irrigation industry, and Section 2 discusses the reforms that are needed to provide reliable urban water supplies.

Yours sincerely

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A/g Chief Executive Officer

Attachment: IAL Submission to Productivity Commission Draft Report on Australia's Urban Water Sector

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ATTACHMENT

Productivity Commission Draft Report
Australia's Urban Water Sector

Submission from Irrigation Australia Limited

May 2011

1. Context

1.1 About IAL

IAL is a national, not-for-profit organisation representing the whole of Australia's irrigation industry chain, including both rural and urban irrigation. IAL has 654 members. These members include organisations and individuals from all aspects of the urban water industry such as major water providers, corporations that supply irrigation equipment and organisations, consultancies and individuals who design, install, maintain and use irrigation systems. IAL's membership also includes educational and research institutions, government and statutory organisations, manufacturers and retailers. This broad membership base enables IAL access to credible technical information across the irrigation industry service chain, as well as to the collective technical services of its members.

IAL seeks to lead the development of a professional irrigation industry embracing best practice to underpin healthy, sustainable urban and rural communities and lifestyles. IAL objectives include:

- ensuring all irrigation water is used efficiently and responsibly;
- promoting the responsible use of water through training and certification schemes; and
- promoting environmental stewardship within the irrigation industry.

IAL's core function is to provide technical, training, certification and information services to support best practice irrigation across Australia.

1.2 About the Urban Irrigation Industry

The lifestyle horticulture sector is an enormous industry across Australia employing an estimated 110,000 people and generating at least $9.39billion per annum in economic activity[1]. The urban irrigation industry is a significant component of this sector with over 2,500 businesses employing over 13,700 people and turning over more than $3billion each year[2]. This sector supports public open spaces such as sports playing fields, parks and gardens and golf courses, as well as irrigation systems for use on domestic gardens and lawns. This sector clearly has an interest and stake in a safe and reliable urban water supply.

1.3 The Value of Urban Green Space

The lifestyle horticultural sector contributes to, and supports broader social benefits for the urban community, including environmental, health and economic benefits. For example, the benefits of green open space were recently valued in two Sydney local government areas as having an annual net social

[1] *Smarter Water Conservation: The Value of the Lifestyle Horticulture Sector (LHS) in Australia*, Irrigation Association of Australia campaign 2007.
[2] *The value of urban irrigation in Australia* – a pamphlet published by the Irrigation Association of Australia 2007.

benefit of $1.2million and $1.4million for the Ashfield and Mosman local government areas respectively, from environmental services, increased capital property values, and reduced health issues such as obesity and depression[3]. This research is confirmed by the Co-operative Research Centre for Irrigation Futures (CRCIF) Technical Report No04/08[4] which presented a catalogue of research on the value of green open space to show, inter alia:

- environmental benefits such as:
    - cooling effects on buildings to reduce energy consumption by between 7 and 47%;
    - improving urban stormwater management by reducing peak flows and runoff pollutant loads;
    - maintaining soil structure and preventing erosion; and
    - maintaining biodiversity in urban areas.
- social benefits such as:
    - preventative health care including stress reduction, depression management and avoidance of obesity.
    - childhood development in parks and open space.
    - commons for social interaction and cohesion; and
    - benefits associated with organised sport.
- economic benefits such as increased property values and tax revenue.

Clearly, green space in our urban environments provides important and valuable social benefits, and these benefits are fundamentally supported by irrigation. The social benefits of urban green space, and the effects of new policy settings on the irrigation sector needed to support these benefits, should therefore be seriously considered in any reform processes.

1.4 The Impact of Restrictions

Notwithstanding the value of urban greenspace to our urban communities, most governments across Australia responded to the onset of drought in the early 2000's with the introduction of water restrictions on outdoor water use. The nature of water restrictions varied between jurisdictions, but generally included restrictions on outdoor water use including prohibitions on some forms of irrigation, and limits on days and times at which certain watering activities could be undertaken.

The implied costs of long term water restrictions in Australia have been estimated in the order of $1.6 – 6.2 billion each year. Urban green spaces are estimated to account for 27% of these costs[4]. The magnitude of this estimate is confirmed by the Productivity Commission[5] which listed estimates of the cost of water restrictions in various Australian cities as:

- $150 per annum per household in Sydney, as the additional costs to using higher water prices to achieve behavioural change.
- between $347 and $870 per annum per household in Perth if sprinklers were to be banned, using opportunity cost of time based on mean wage; and
- a willingness to pay up to $268 per household per annum in Canberra to avoid Level 5 water restrictions.

Water restrictions should only be used for short durations, where the net social costs of the restrictions over a planning timeframe are less than the costs of implementing other demand management measures or developing new water supply options.

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[3] J. Morison, L. Mathieson, 2008 EconSearch Pty Ltd 2008, Scoping Study: Economic Value of Irrigation in Urban Green Open Space

[4] CRCIF Technical Report No.04/08. *Irrigation of Urban Green Spaces: a Review of the Environmental, Social and Economic benefits*, April 2008

[5] Productivity Commission, 2008. Productivity Commission Research Paper: Towards Urban Water Reform: A Discussion Paper.

A survey of 1400 Melbourne customers co-ordinated by City West Water in 2002 for Melbourne's Strategy Directions Report showed that while 73% of respondents supported water restrictions as being socially responsible, that there was overwhelming support for restrictions once every ten years (on average) and that 73% of respondents considered that restrictions should be for six months at a time[6]. Based on this research, the Melbourne community clearly perceives water restrictions as a useful temporary measure, but not a long term response.

The technical basis of many water restriction regimes is also questionable. There is various data to substantiate that irrigation technology can be used to achieve water use efficiency and water savings, and therefore should be promoted during supply shortfalls, not prohibited. Table 4.1 shows Sydney Water estimates of garden water use rates from different watering methods (cited in Sydney Morning Herald, 16 August 2004). The data in Table 4.1 was confirmed by the System Check project undertaken by the Cooperative Research Centre for Irrigation Futures[7], and funded by the former Irrigation Association of Australia (IAA) and Sydney Water, which found that at 50 homes across Sydney garden watering using sprinkler systems uses about half that used for hand watering, and that for lawn watering an automated fixed sprinkler system uses about 80% of that used by hand watering. Unfortunately, like in many other jurisdictions, sprinkler systems were prohibited by water restrictions yet hand watering was permitted. This data therefore suggests that restrictions achieve water savings because of the inconvenience caused by restrictions on days and times at which watering can be undertaken, not necessarily by elements of restriction regimes that prohibit some forms of irrigation. Consequently, it can be readily argued that water restriction regimes that prohibit some forms of irrigation are technically flawed, imposing inequitable costs on domestic gardeners and the urban irrigation industry and compromising public open space assets.

Table 4.1. Water use by irrigation type

Watering method	Weekly use (L)	Summer Avge (kL)	Reduction (Kl/summer)	Percent reduction
By hand	2500	33	Standard	Standard
Tap timer	2000	26	7	20
Controlled irrigation system	1250	16	16	50
Uncontrolled irrigation system	2250	29	3	10

So clearly, while water restrictions achieve reduced water consumption, they generally:

- come at significant community and industry cost;
- do not secure the quantum and sustainability of water savings that might otherwise be achieved by encouraging investment in efficient irrigation systems;
- are inequitable to both community and the urban irrigation industry; and
- are not supported by the community as a long term measure to achieve a supply demand balance.

2. Urban Water Sector Reform

2.1 Objectives for Urban Water Sector

Given the above context, IAL recommends that one key objective for Australia's urban water sector must be to provide a reliable water supply to support a healthy and sustainable community, and where the

[6] http://thesource.melbournewater.com.au/content/archive/june2002/study.asp

[7] Cooperative Research Centre for Irrigation Futures. 2006. *Technical Report No.01/06 The Efficiency and Audit of Residential Systems in the Sydney Metropolitan Area*.

urban water supply reliability optimises the net social benefit. This should be a uniform objective across all urban water systems.

The key types of reform needed to achieve this objective of a reliable urban water supply, more or less in order of logical chronological sequence, are:

- Institutional reform to separate politics from more objective water planning and water supply planning (including supply and demand options), pricing and service provision functions.
- Nationally consistent definitions of water restriction levels and the unit of measure for supply reliability.
- Water planning processes that are clear and transparent.
- water pricing frameworks to recover the true costs of achieving the water plan; and
- Measures to increase competition to water supply.

These are discussed in more detail below.

2.2 Institutional Reform

To ensure objective and cost efficient urban water supply arrangements, the reform of the urban water sector needs to involve clear specification of and separation of the relative roles of:

- Elected governments in setting policy principles through the NWI and State based legislative frameworks for water planning, pricing and enabling legislation for independent water planning and regulatory organisations.
- Water planners in objectively developing science based water supply plans (including supply and demand side measures) that implement the NWI principles and guidelines for water planning within the state legislative frameworks to achieve a level of reliability that is economically efficient.
- independent regulators that ensure price paths to fully fund the cost-effective delivery of water supply plans, including recovering the costs of a proper water planning process, and the effective delivery of services to end user customers.
- Service providers that competitively and innovatively tender to provide services required by water plans and fulfil regulator requirements for service delivery to the end user.

Some jurisdictions have established these types of arrangements for major capital cities, as noted in the Productivity Commission Draft Report. However, there appears no reason why this separation of roles cannot occur across all urban water supplies, with local values being taken into account through the process of optimising reliability and net social benefit in water planning processes.

This separation of roles is likely to be far more efficient as it reduces duplication of processes and roles between organisations, provides greater focus and specific purpose for water management organisations and encourages development of specialist human resource in each role as planner, regulator, or operator.

The success of institutional reform can be measured by the level of understanding that the community has of the relative roles of each organisation in the urban water sector. Alternatively failure of this institutional reform can be identified by the extent to which government is expected to, and does, intervene and pervert objective processes for water planning and supply. Importantly then, the relative roles need to be clearly explained to the community <u>as part of</u> the reform process.

2.3 Nationally Consistent Definitions of Reliability

Reform to achieve a reliable urban water supply needs to commence with the fundamental action of developing nationally consistent definitions of:

- water restriction levels*. For example:
    - level 2 water restrictions is equivalent to 15% reduction on average non-restricted consumption;

    - level 3 water restrictions is equivalent to 20% reduction on average non-restricted consumption etc
- the unit of measure of reliability**. For example:
    - Level 2 restrictions are expected be in effect for not more than Y months in any X year period; and
    - Level 3 restrictions are expected to be in effect for not more than Z months in any X year period.

*the measures included under each water restriction level could differ between jurisdictions according to local circumstances.

**the actual reliability can differ between jurisdictions according to local considerations such as costs of water supply or demand management and community willingness to pay, but the unit of measure should be consistently specified.

In any case, these definitions need to be couched in terms that can be readily understood by the wider community.

2.4 Water Planning Processes

The National Water Initiative (NWI) already includes the blueprint for water planning processes through guidelines for water plans and planning processes. Reform simply needs to strengthen and extend the commitment and processes for implementing the NWI guidelines to water supply planning as well.

IAL recommends that water planning processes:

- should seek to achieve a level of reliability that is economically efficient, where the determination of that economic efficiency properly accounts for broader net social benefits like the value of urban greenspaces as presented previously;
- need to follow a more defined pathway that implements the guidelines in the NWI, in particular that water planning:
    - objectively and transparently considers and compares all reasonable supply and demand management options, including the technical feasibility and cost implications, as well as the broader net social benefits of each option.
    - clearly states the expected reliability levels of the water plan to enable businesses, such as the urban irrigation industry, better information upon which to make longer term strategic business planning decisions to cope and manage through restriction periods; and
    - in relation to demand side measures:
        - specifies the nature and expectations of demand measures that will be used at each water restrictions level; and
        - clearly specifies trigger points for demand measures such as restrictions so that community and businesses can better appreciate the place of restrictions in urban water management, and make short term strategic decisions when trigger points are impending.

2.4.1 Demand Management Measures in Water Plans

Demand management measures should be science based and consider proper analysis of the effect that the proposed measure will have on water use and the net social benefits and costs of those measures. In this regard, IAL also recommends that reform processes should encourage water planners to look beyond traditional and inequitable water restrictions on outdoor water use to more innovative schemes that enable net social costs to be minimised or avoided, such as allocation schemes to enable customer choice on what is discretionary water use, and offset schemes that enable water users to essentially buy higher levels of security during restrictions periods by investing in efficiencies elsewhere.

In any case, reform of water planning processes in the urban water sector should include requirements for demand management measures to be specified as part of the overall published water supply plan so that the community and business are aware of the nature of these measures and their likely impacts. For example, if Level 3 water restrictions involve say prohibition of lawn watering, and Level 3 restrictions are expected for 12 months in any 3 year period, then this will likely influence the business model, staff training and customer focus for the local irrigation retail outlet, whereas if the demand management was a more innovative approach then the business may operate under a more aggressive model to market efficient lawn watering equipment during restrictions.

The uncertainty for the urban irrigation industry (and the broader community) is that, at present, many jurisdictions have not specified the demand management measures they intend to use, the triggers for introduction of such measures nor the likely frequency with which they are expected to be implemented.

2.5 Water Pricing Frameworks

- IAL considers that pricing should confirm a clear and certain obligation between the water retailer (service provider) and the end user in respect to quality, reliability and time of supply. There needs to be a clear separation between rates for small (domestic) users and bulk users. The price for bulk users must reflect the true cost of providing the water at the required volumes. It should be noted that retail competition rarely delivers any actual benefits. Experience in the telephone, electricity and gas retail markets show efforts get directed to churning customers. Whole extra layers of cost get included to cover the cost of marketing and promotion, at the cost of ignoring other measures to encourage increased efficiency at the supply end, e.g. mandatory annual efficiency improvement.

That is, the end user pays a price commensurate with a defined level of service. In this regard, IAL supports the use of block tariffs in pricing frameworks that includes a block to protect base human needs with the next block set at the long run marginal cost of water secured from new infrastructure or the next cost-effective demand management measure. This approach adequately deals with issues of equity through the lower block price as well as ensuring via the long run marginal cost:

- that future water planning has been undertaken and is reviewed for each new price period.
- that financial capacity is available to maintain a specified supply reliability at all times to meet the obligation to the end user.

IAL also supports innovative and flexible pricing arrangements as part of demand management measures, such as scarcity pricing and tradable allocation arrangements as alternatives to the use of traditional restrictions regimes.

2.6 Water Supply Competition

IAL considers that reliability of water supply would be improved by reforms that make it easier for, and indeed encourage, third parties to participate in water supply provision. This includes increasing contestability of bulk water provision, and retail services. This is particularly important for the urban irrigation industry which generally requires a lesser quality of water to be fit-for-purpose than what is provided by traditional urban water providers, and may be achieved through options such as localised sewer mining, stormwater harvesting and recycling schemes.

IAL considers that reforms should be adopted to make it easier for and to encourage any party to provide fit-for-purpose water. Such reforms may include:

- Ensuring legislative frameworks in each jurisdiction to enable third parties to have fair and open access to networks and provide alternative water sources.
- Streamlining regulatory approval pathways and assisting proponents through this pathway to enable development of alternative water sources.

- Rationalising the series of national and state water quality guidelines related to recycling and reuse to make it clear which guidelines are applicable in which circumstance.
- The making available of pipe networks for the distribution of alternative fit-for-purpose water for irrigation from such sources as sewer mining, stormwater harvesting and recycling schemes.

2.7 Rural to Urban Water Trade

IAL is particularly interested in the question of rural to urban water trades.

While IAL supports the principle of water trading, we also consider that we need a precautionary approach to rural to urban water trading until there has been more detailed assessment of the social impacts and long-term economic efficiency.

IAL's reticence for purist water trading for rural to urban stems from the likelihood that permanent water trade from rural to urban users will, in effect, be irreversible (because of the collective buying power of urban communities compared to individual rural water entitlement holders), the socio-economic impacts on regional communities and the market effects for food and fibre products may not be apparent for several years. As a result, the market would operate without full information about the long term economic effects of the immediate decision, and therefore a purist competitive market approach is not appropriate.

Until we do have better information about the socio-economic effects of reduced rural water availability, IAL suggest that rural to urban water trade be permitted only with the following protections:

- trade is temporary; or
- the Pareto principle is satisfied (ie that no community is worse off, and preferably that both communities are better off), which may be demonstrated by measures such as:
    - urban communities "producing" water through investments in rural water efficiency or measures to maintain production levels; or
    - a case specific socio-economic analysis that determines that the rural community is no worse off, including addressing the issue of stranded assets.

3. Reform Implementation

IAL suggests that the Commonwealth should drive reform through a number of strategies that may include:

- The biennial assessment of NWI implementation undertaken by the National Water Commission, and publicising key reform achievements and areas where reform is slow or stalled.
- Promoting the benefits of urban water reform to the community and providing advice about how they find out information about reform in their jurisdiction.
    - Linking state's satisfactory progress on reform to that state's eligibility to apply to Commonwealth water related funding programs. There should be promotion of Best Practice schemes such as South Australia's IPOS for all urban water users, and Queensland's use of Certified Irrigation Professionals. The initial focus needs to be on large users (parks, gardens, playing fields, schools), then later should turn to industry and domestic/household users. Institutions who have adopted the best practice scheme should then be able to irrigate when they need to in order to maintain facilities in fit-for-purpose condition. This also means the ability to run systems during winter months for maintenance/testing purposes without needing to apply for temporary permits.
    - Price structures for all users should be set by an independent regulator. It should be based on the cost of supply and not on returning a dividend to local and state governments, or quasigovernmental entities.