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Mr Mick Gentleman MLA
Chair
Standing Committee on Planning and Environment
ACT Legislative Assembly
London Circuit
CANBERRA ACT 2601

Dear Mr Gentleman

On 7 June 2007, the Assembly resolved that the Standing Committee on Planning and Environment would inquire into water use and management in the ACT. As Chair of that Committee, you wrote to me seeking a response to a number of issues.

I submit the attached responses to the issues raised in your letter. Further, I wish to advise that the contact officer with whom the Committee Secretary, Dr Hanna Jaireth, can liaise in relation to this inquiry is Mr Stewart Chapman, Senior Manager, Energy and Water Policy, Department of Territory and Municipal Services. Mr Chapman may be contacted on telephone 6207 0290 or at stewart.chapman@act.gov.au.

Thank you for the opportunity to comment on these important issues.

Yours sincerely

Jon Stanhope MLA
Minister for the Environment, Water and Climate Change

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**RESPONSE to the LEGISLATIVE ASSEMBLY STANDING COMMITTEE on
PLANNING and ENVIRONMENT**

Question raised by the Chair, Mick Gentleman MLA, to the Chief Minister

**The best option for the ACT Government investment in maintaining a
sustainable water supply in the ACT:**

- a likely impacts of climate change on water resources available to the ACT;
- b the extent to which demand reduction strategies outlined in *Think Water, Act Water* have been implemented;
- c international best practice principles and priorities for urban water management suitable for the ACT;
- d the role of Canberra as Australia's national capital and provider of water to the largest population in the Murray-Darling Basin;
- e the relative merits of staged water restrictions as compared to a permanent water conservation strategy;
- f maintaining the health of trees, sporting fields and gardens and the city's Bush Capital character; and
- g the relative financial, environmental and potential health impacts of water capture and reuse practices.

**The best option for the ACT Government investment in maintaining a
sustainable water supply in the ACT.**

Response:

Introduction

The issue of ensuring sustainable water supply has been a predominant issue for the ACT Government and ACTEW through 2007, although this has been a very critical matter since the release of the Government's water strategy *Think water, Act water* in 2004.

There are a number of significant reports and papers that have been released since July 2007 on the Government and ACTEW websites.

ACTEW, as a major part of its ongoing medium- and long-term water planning, has in recent years proposed a number of options to deal with the ACT's declining levels of water resources. The ACT Government in early 2007 requested ACTEW to undertake further investigation work to examine the future water security needs of the ACT and surrounding region. The need for this review became increasingly necessary following the decline in long-term average inflows to the ACT, especially in 2006. One of the options proposed by ACTEW to help secure the ACT's water supply was Water2Water, which consisted of purifying the ACT's used water and adding this to the Cotter Reservoir, which would also be enlarged as an ACTEW proposal.

In April 2007, the ACT Government established the *Water2WATER* Taskforce, which later became known as the Water Security Taskforce, and an Advisory Panel. An Expert Panel on Health, an independent body, was also set up to consider the health aspects of the construction of a water purification plant.

The Expert Panel on Health provided its report, *Public Health and safety in relation to Water Purification for Drinking Water Supplies*, in July 2007.

On the environmental aspects and risks of indirect potable water use and the enlargement of the Cotter Dam, eWater CRC was commissioned to prepare a report, which was presented in August 2007.

ACTEW provided its report with recommendations in July 2007 to the ACT Government.

The Water Security Taskforce undertook a review of the ACTEW proposals and presented its report to the ACT Government. It drew upon reports from a range of independent studies especially dealing with water reuse and demand management as well as ACTEW's reports and community consultation. A copy of the executive summary and recommendations of the Water Security Taskforce is attached.

In response to the ACTEW report on Water Security for the ACT and Region and analysis by the Water Security Taskforce, the Chief Minister announced on 23 October 2007 a suite of initiatives, which included:

- increasing the size of the Cotter Dam;
- the installation of infrastructure to increase the volume of water transferred from the Murrumbidgee River to the Googong Dam (about \$70 million);
- pursuing the possibility of purchasing water from Tantangara Dam (about \$38 million);
- investigating the extension of Permanent Water Conservation Measures;
- implementing a pilot Smart Metering program enlarging the Cotter Dam from 4 gigalitres (GL) to 78 GL, with planning and design work to commence immediately and work expected to be completed within three-to-five years (at a capital cost of about \$145 million);
- increasing funding for demand reduction measures by \$2 million;
- designing a demonstration Water Purification Plant, with the water produced by the plant to be used for purposes other than drinking (about \$6 million will be spent during the year-long design phase);
- voluntarily off-setting the additional greenhouse gases generated by these projects.

The region's water supply has historically been dependent on rainfall and, as the drought continues, it is essential that a greater range of water security measures are put in place - incorporating both supply and demand.

These measures represent effective planning of water resources, within a staged, adaptive management approach, to ensure adequate water supplies for the ACT region into the future.

The ACT Government and ACTEW have already delivered a number of projects to secure the ACT and region's water supply, including:

- the Cotter to Googong Transfer Scheme;
- major enhancements to the Stromlo and Googong Water Treatment Plants;
- extracting water from the Cotter Dam;
- installing submersible pumps in the Murrumbidgee River; and
- investing in a \$17 million stormwater harvesting project in partnership with the Australian Water Fund.

a likely impacts of climate change on water resources available to the ACT

Climate change along with climate variability is considered the most significant factor affecting ACT planning for water security. In all of its recent analyses into future water options and water security for the ACT, ACTEW has taken into account the impact of climate change on water resource planning, including in its latest planning reports and recommendations. ACTEW has made extensive use of data and analysis undertaken by the CSIRO, including the worst-case scenario for 2030. CSIRO analysis reveals that droughts in the southern Murray-Darling Basin will be drier and longer in future years. This information is used with rainfall and climate data spanning over 100 years. In its 2004-05 *Future Water Options* studies, ACTEW took a conservative approach by assuming that the CSIRO 2030 worse-case scenario in terms of climate had already occurred – a reduction of 30% in inflows. In the 2007 review, remodelling using current extremely low inflows gave an almost 50% reduction in average long-term inflows. The incidence and impact of bushfires on inflows and availability is also assessed.

b the extent to which demand reduction strategies outlined in *Think Water, Act Water* have been implemented

The demand reduction programs set out in the ACT Water Resources Strategy *Think water, Act water* commenced in 2004-05, and will continue through to 2008-09.

The Government is providing financial support for a range of demand reduction or incentive programs for households and the commercial sector to reduce water consumption, as well as an education and awareness campaign to engage the wider community in the protection of this valuable resource. The emphasis on programs under the strategy is being modified in recognition of the impact of the drought and the possible need to move to higher stages of water restrictions.

The *Water Efficiency (Incentives) Program* has comprised the following programs:

- the *GardenSmart* Program (a service to provide advice on garden water efficiency and a \$50 rebate on water-efficient products);
- the *WaterSmart Homes* (a service to provide installation of a water-efficient showerhead, flow regulators and fix leaking taps and toilets);
- the Rainwater Tank (Internal Connection) Rebate Program;
- the Sustainable Schools Water Audit Program;
- the Commercial Water Audit Program (high water users only);

- improved water efficiency in the irrigation of public sportsgrounds, parks and schools; and
- communication and education campaigns (displays, events and activities).

During 2007/08, the ACT Government will continue to deliver the *Think water, Act water* tune-up audit services to ACT residents, businesses and schools. Programs provided via the *Think water, Act water* tune-up include:

- commercial/government building audit retrofits;
- continued Sustainability Schools indoor and outdoor audits;
- implementation of Sustainability Schools indoor and outdoor audits findings,
- residential outdoor audits through the *GardenSmart* program;
- the Water Efficient Toilet Program (replacement of 11-litre single-flush toilets with dual-flush 6/3-litre toilets or less);
- Grey water System Rebates for the residential sector; and
- demonstration projects.

A range of promotional activities has been undertaken to raise public awareness of the domestic water efficiency programs offered to residents of the ACT and to increase participation rates in those programs.

To date the programs implemented under *Think water, Act water* will see the targets set for reductions in water consumption of 12% by 2013 and 25% by 2023 achieved if not bettered by 2013 and 2023. The *Think water, Act water* audit programs have contributed to this achievement with:

- over 7,300 ACT residents having taken up the residential programs *WaterSmart Homes* and *GardenSmart*;
- 75 commercial audits undertaken to date and funding to assist the commercial sector implement retrofitting to address the results of audits is included in the 2007/08 appropriation for the *Think Water, Act Water* program;
- water audits being completed on the five ACT police regional stations;
- 40 water audits undertaken as part of the ACT Government-supported ACT Sustainable Schools initiative, the AuSSI, during 2006/07 and 2007/08.

The success of this Government's joining with NSW to introduce a Greenhouse Gas Abatement Scheme (GGAS) in 2005 has seen the need for the *WaterSmart Homes* program significantly lessened. As a result of the implementation of the GGAS, the business sector has responded with products and services that contribute to providing free water-efficient audits to ACT homes. As a result funds that were previously used to deliver the *WaterSmart Homes* program will be redirected into other water saving measures for the householder, such as water-efficient gardening and grey water rebate initiatives.

A summary of the *Think Water, Act Water* 2007/08 water-efficiency programs delivered by the Sustainability Policy and Programs Section, including the audit programs, is as follows:

• Public awareness, communication and evaluation services	\$345,000
• Dual-Flush Toilet Rebate – old 6/3-litre toilet	\$2,000
• Dual-Flush Toilet Rebate – new 4/3.5-litre toilet	\$150,000
• Dual-Flush Toilet Rebate – new 4/3.5-litre – full cost	\$52,000
• Grey Water Treatment System Rebate	\$50,000
• Sustainable Schools Indoor Audit Program	\$9,000
• GardenSmart	\$210,000
• Murrumbidgee Country Club Water Efficiency Demonstration Site	\$30,000
• Sustainable Schools Outdoor Audit Program	\$28,000
• Commercial/Government Building Retrofits	\$300,000
• Sustainable Schools Indoor Audit Implementation Program	\$100,000
• Grey Water Diverter Hose Giveaway	\$375,000
• IrrigationSmart Program Design	\$75,000
• IrrigationSmart Pilot Scheme	\$60,000
• Rainwater Tank Rebate – existing tank internal plumbing	\$30,000
• Rainwater Tank Rebate – new tank plus internal plumbing	\$200,000
• CONTROL Upgrade at ACT Schools	\$375,000
• Schools irrigation systems upgrade	\$600,000

c international best practice principles and priorities for urban water management suitable for the ACT

There are no international standards regarding water management principles, but ACTEW has adopted, where appropriate and relevant, best accepted practice in undertaking water planning and management taking into account developments in other Australian jurisdictions and internationally. This is exemplified by the design and technology for the development of the UV treatment plant at the Mt Stromlo Water Treatment Plant and the studies carried out for a possible water purification plant in Canberra. Studies and development undertaken are considered as useful case studies.

The ACT has also adopted best practice principles in the development where possible of water sensitive urban design in the newer suburbs of Canberra. New suburban developments are required to adopt a range of water sensitive urban design practices to meet water saving targets.

As well, the ACT's urban waterways project, which is supported by the National Water Commission, is undertaking firstly studies and then infrastructure activities to best manage and utilise the ACT's urban waterways and wetlands such as at Sullivans Creek and Yarralumla Creek.

d the role of Canberra as Australia's national capital and provider of water to the largest population in the Murray-Darling Basin;

One of the critical factors in the establishment and maintaining of Canberra as the national capital was to ensure that there are sufficient and ongoing water resources to meet the needs of the nation's capital. The Cotter-upper Murrumbidgee system provides the ACT's water resources. The legal framework for the establishment of Canberra and later self-government legislation provided the strong basis to provide for the ACT's water needs. Infrastructure has been built and later expanded and augmented to capture water supplies and service the needs of the biggest population in the Basin. The *Googong Dam Act 1976* and the subsequent construction of the Googong Dam exemplifies this process.

Murrumbidgee flows from the Territory are critical for rural and human needs for activities along the Murrumbidgee and to a certain extent, the Murray River. The ACT extracts water that it needs. The volume extracted is based on a licence regime. This is provided and managed through the *Water Resources Act 1998* and later amended as the *Water Resources Act 2007*. ACT water use is much less than water required for rural and irrigation activities. The ACT provides for environmental flows and does not over allocate water within the Territory.

The provision of water supply for Canberra also necessitates ensuring adequate water supply for Queanbeyan under ongoing agreements.

Canberra is the largest urban centre in the Murray-Darling Basin but its water use has not led to an over allocation problem.

e The relative merits of staged water restrictions as compared to a permanent water conservation strategy

Permanent water conservation measures deal with sensible, prudent and efficient uses of water. They are not tied to any level of water storage or water availability. The aim of such measures is to use water efficiently and thereby conserve water. The measures adopted are much the same as those that apply in other jurisdictions and cities. These were developed through community consultation.

Temporary water restrictions are a far more critical device aimed at reducing water use when there is less water available in our storages. Temporary water restrictions are a staged regime reflecting declining levels of water availability and future water availability. The need for reporting and compliance is greater. Seasonal factors are also taken into account if and when shifts are made from one stage to another.

When temporary water restrictions are enforced a number of the permanent conservation measures are suspended because a much stricter water saving regime is required.

Both measures are enforced as delegated legislation through the *Utilities Act 2000*.

f maintaining the health of trees, sporting fields and gardens and the city's Bush Capital character

The ACT is proposing the following projects be implemented to reduce the reliance of parks, open space and sportsfields on potable water.

Irrigated Parks (Town and District Parks)

Use of Second Class Water

1. Increasing the efficiency of ageing irrigation systems and conversion of irrigated parks to second class water. Design and costings have been done for the conversion of a number of parks. Parks which could utilise lake water include:
 - Weston Park
 - Point Hut Pond District Park
 - Margaret Timpson Town Park
 - Yerrabi Ponds District Park
 - Telopea and Bowen Parks
 - Black Mountain District Park

This assumes there is capacity to draw water from the lakes. In addition Corroboree Park could be connected to the reticulated black water system in inner north Canberra and a stormwater capture system could be constructed under Glebe Park.

2. Installation of the computerised irrigation control system to remaining 8 town and district parks. This assumes some limited access to potable water where conversion to second class water is not possible.

3. Installation of rainwater tanks in urban parks depots for use in spray tanks, cleaning of shopping centres and watering trees.

Irrigated and Dryland Grass Parklands

Oversowing District Parks and high-use areas of dryland parkland such as Neighbourhood Parks with drought resistant grasses such as Couch.

Urban Forest

Street trees and trees in non-irrigated parklands

Long-term progressive replacement of drought-sensitive species with species that have proved to be more drought-tolerant in Canberra or dryer inland cities. The research, planning and implementation would be done within the context of implementing the Urban Forest Renewal Initiative that relates to Action 25 of the Climate Change Strategy.

Watering of trees

Watering of trees using predominantly second-class water obtained from the Lower Molonglo treatment plant and urban lakes and ponds in accordance with abstraction licences.

Sportsfields

The Government announced on 23 October 2007 that it will invest \$2 million to assist our sport and recreation industry to create more sustainable facilities.

The funding would be used by the Government (Sport and Recreation Services) to fund a master plan for all ovals and for diagnostic studies for major sportsgrounds to assess their maintenance needs, and the rest would be distributed as capital grants to sporting organisations to assist them to become more water-wise. The funds will allow the Government to develop a master-plan that will guide the long-term development of water sustainable sporting facilities and diagnostic work to assess the maintenance needs of our ovals under these conditions.

Sport and Recreation Services has already started working with outdoor field sports to determine possible methods to reduce wear and tear on priority sportsgrounds should Stage 4 water restrictions be introduced.

g the relative financial, environmental and potential health impacts of water capture and reuse practices

The planning and management of water resources is undertaken in a fully integrated approach to fully gauge all relevant impacts. ACT Water security planning incorporates all aspects of supply and demand taking into account health and financial aspects as well as environmental and hydrological factors. This applies to the assessment of water reuse undertaken by ACTEW and the assessment by the Water Security Taskforce. The assessment of environmental and health impacts take into account impacts on the region and the southern Murray-Darling Basin.

The analysis of the Water Security for the ACT region report and its recommendations by both ACTEW and more critically by the Water Security Taskforce and Water Security Taskforce Advisory Panel has sought to capture and assess all financial, environmental and health impacts in arriving at the recommendations. Energy cost impacts were considered and this is reflected in the commissioning of an assessment of the energy impacts relative to water security options presented by ACTEW.

A long-term cost-effective approach is adopted in recommendations dealing with investment decisions. The ACT Department of Treasury provided an analysis of the financial outcomes of the various water security options.