



Master Plumbers ACT

Submission to ACT Government Budget Consultation for 2020-21

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About Master Plumbers ACT

Master Plumbers ACT is the peak association representing the interests of professionally trained and accredited plumbers, drainers, gasfitters within the Canberra region. The association is dedicated to ensuring members: have access to the highest level of ongoing technical and professional development; training; industry leadership; and promoting ethical standards. Our aim is to ensure the Canberra community is serviced by plumbers who are up-to-date, professional, qualified and ethical. We have been operating in the ACT since 1976 and have a long and successful history of ensuring our members are ethical and abide by necessary legislation. Our members adhere to an enforceable Code of Ethics – if we receive complaints about members from consumers we investigate and intervene if necessary.

As both residential and commercial construction continues to be on the up in Canberra, the demand for plumbers has increased. We believe our member plumbers – from sole traders to large companies employing hundreds – are contributing greatly to this critical urban health infrastructure in the ACT. Our members not only work across water and sewerage services, but many also have input into energy supply channels via gas structures in residential, commercial and urban settings. If their work wasn't being done to the high standards of excellence required, we would very quickly be aware of it.

We have 90 plumbing business members, representing approximately 720 plumbers in the ACT out of a total of 2,000. These plumbers work in a range of situations from individual home maintenance to large scale apartment fitouts. Our membership is bound to increase over coming years as community expectations around excellence in building and trade work are enhanced.

Our Vision

Recently we revised our Vision Statement by adding the following key words:

*To be recognised as the leading Association of plumbing, drainage and gas-fitting businesses, dedicated to professional training, industry leadership and ethical standards **in the interests of public health, safety and environmental sustainability in the ACT.***

Community

According to this vision, Master Plumbers ACT sees itself as being an integral part of the broader community. For this reason, we are involved in the following community activities:

- Providing pro bono plumbing work for consumers on low incomes
- Supporting Icon Water and Evoenergy in consumer education activities around health/safety and protecting the environment
- We also work closely with the CIT Plumbing School, assisting students to access critical information through introducing them to our business partners.



Plumbing expertise

We are uniquely placed to provide expert plumbing advice directly to the community on best practice water, sewerage and gas services in the ACT across commercial and residential settings. Through our close working relationships and formal partnerships with major ACT agencies (such as Evoenergy and Icon Water) and a broad range of local, national and international plumbing suppliers and manufacturers, we can provide advice and feedback on issues related to plumbing involving gas, water and sewerage connections. Some of our members and partners also have high-level as well as on-the-ground expertise in hydraulics. We therefore have an overarching and holistic view across all these areas and are uniquely placed to understand intricacies involved in situations where they interconnect.

Importantly, we have extensive experience and involvement in government-funded water saving programs:

- During the Millennium Drought we administered the ACT Government Toilet Smart program (2008-2013) with all work being carried out by Master Plumber members; and
- Currently we still manage the operational aspects of the Queanbeyan-Palerang Council Waterwise program since 2000, resulting in a significant reduction in water consumption by its ratepayers. This work is carried out by accredited Master Plumber members.



Develop a universal water saving program

Introduction

Drawing on our unique area of expertise as well as that of our stakeholders, we are now submitting a submission to ACT Government on a broad program of plumbing-focused water saving initiatives in view of the worsening drought conditions currently threatening our water supply.

These initiatives together would form a comprehensive universal water-saving program, the implementation of which would see the ACT become an exemplar jurisdiction of best-practice in water saving methods that utilise innovative and sensible plumbing solutions.

The Millennium experience

During the “Millennium Drought” of the 2000s the ACT became a shining example of the positive outcomes that could be achieved when government and the broader community bands together for a common goal. As well as considerable behavioral changes from consumers, there were also extensive measures undertaken by ACT Government and other agencies in the shared crusade to save water and reduce wastage. These measures ranged from strict mandatory water savings restrictions by the water agency, through to broader education of the community which responded well to the ACT Government’s inclusive approach and message of “we’re all in this together”.

The ACT Government response then included a range of incentive programs such as the Toilet Smart program, administered in conjunction with the Master Plumbers Association, who worked with their members to upgrade Canberran’s toilets to water saving models. This project alone succeeded in providing substantial savings in water from toilet flushing through the upgrading of 5,000 toilets. For one household alone, the savings were calculated to be 36,600 litres annually just by replacing single flush toilets with dual flush options. While eventually the need for the restrictions was relaxed and by 2010 the children who had been born in this time started to experience rain, amazingly the behavioral changes were harder to shift. Many parents still nervously feel the need to knock on their teenagers’ bathroom doors at the inordinate length of time they can spend under the shower and to remind them that droughts are never far away in our dry land.

This reluctance to fall back into wasteful patterns of water use will bode us well as the Territory, along with the rest of the nation, looks fearfully at lowering dam levels, and stares down the face of yet another period of drought – not to mention the growing alarms around climate change. But as has been shown, we need to do more than just change behavior. The ACT’s water utilities operator, Icon Water, recently acknowledged the very real risk of impending drought and the impact on the Territories’ water supply in their latest Annual Report.

Although our source water system is secure, there is always the possibility of experiencing a more severe drought that will require water restrictions. The last financial year has been the worst on record for inflows and the last 24 months the second worst (see Figure 3). Over this period storages have fallen from 84.2 per cent to 56.5 per cent. Climate forecasts are predicting a high likelihood of dry conditions continuing during Spring 2019. If inflows do not increase during 2020, the current drought could develop into a worse drought than the Millennium Drought. If this occurs, water restrictions could be required as early as the end of 2020. Icon Water is preparing for further dry weather by promoting water savings and



*informing the community of their obligations under Permanent Water Conservation Measures to ensure demands are minimised.*¹

A recent Canberra Times article ², citing a range of authorities including Icon Water, warned, “As Canberra’s once healthy dam levels fall, water conservation measures will begin”. The article goes on to outline that in June last year the storage held within the ACT’s four major dams was at 69% capacity but in less than 18 months has fallen to 54%. In addition, inflows to Canberra’s dams, measured over comparative 24-month periods are running at their lowest since the millennium drought. According to the Managing Director of Icon Water, Ray Hezkial, their modelling shows there are adverse conditions ahead. “It’s all about the need to be vigilant and take the community on the journey with us.” The journey he is referring to is a water saving journey.²

The initiatives put in place across the board during the millennium drought resulted in a per capita consumption decrease by 35-40%.² While this level still continues today, we need to consider that the ACT’s population has grown significantly in the intervening years and looks to continue to do so. This is without even taking into account the impending drought which threatens to be worse than the millennium drought. Together these issues will place considerable extra pressure on dwindling reserves.

During the Millennium Drought, the Government was wise to invest in the provision of plumbing solutions to the problem. Toilet Smart rolled out of 5,000 dual flush toilets and delivered significant water savings. Since the large-scale take-up of those new technologies the common wisdom is that there are not really any further significant savings to be had from the adoption of new technologies. While this may be true to a certain extent in regard to the low-hanging fruit that was the dual flush, it is also true that the industry has moved on significantly in recent years in regard to research and development around water saving devices and solutions – with some manufacturers being stand-outs in this regard internationally and nationally. In regard to toilets alone, there have been substantial developments including reduction from 9 to 6 litres and even 3 litres – not to mention “out there” developments such as macerating and vacuum disposal systems. When applied strategically and sensibly, these innovative devices and solutions have the potential to take jurisdictions like the ACT to the next step in terms of significant water savings.

See Appendix for examples of new innovations in this space.

Energy saving factor

The impact of drought conditions on water may be clear, but often forgotten is the impact on energy – and the fact that any water saving initiatives will also deliver significant savings on energy use. It has been estimated that more energy can actually be saved through reducing water use than by concerted energy efficiency programs – at rates as high as 25%. ³ This includes at a macro level as energy is used to pump water to deliver it where it needs to be used and in disposing of wastewater. At a micro level, in our homes, when we cut the time, we take to shower we are also immediately reducing our energy use in the gas or electricity required to heat the water. This saves energy (and money!) and also reduces the amount of carbon dioxide emitted into the atmosphere.

It can be clear then that the reduction of long-term water usage across the board will also assist the ACT Government to reach the objectives of its Climate Change Strategy through related reduction in emissions.



Why a plumbing solution?

For all these reasons outlined, we believe it is critical for the ACT Government to implement a range of plumbing-driven water saving measures. Such measures will not only have immediate results but also continue to provide surety as we move further into a world where the impact of Climate Change will continue to ask us to be more strategic and mindful of how we use our water. Accordingly, we see that implementing these measures will contribute to ACT Government objectives of ensuring services and infrastructures keep getting better for everyone who lives here and most importantly, are responsive to changing needs.

The cornerstone of our recommendations is the establishment of a Plumbing Advisory Forum for Water Saving to coral all expertise that contributes to water management and to be the central point for the consideration of innovative and sensible use of plumbing devices. As has been shown from previous and existing responses by governments and others to save water, including around legislation, while undertaken with the best intentions, some of these changes have actually had the perverse effect and not only increased water usage but also adversely impacted on related energy use. The Plumbing Advisory Forum for Water Saving would centralise all the necessary expertise by bringing all relevant experts together – including plumbing – to ensure that all impacting views are canvassed and considered in order to deliver a broad holistic response that delivers true water savings. Most importantly, the Plumbing Advisory Forum for Water Saving would have direct access to the expertise of qualified Master Plumbers who are licensed and adhere to a Code of Ethics.

Another element of saving water that is little understood by non-plumbers is that mechanisms to save water often result in improved lifespans of equipment – saving consumers (and Government) money in the long-run. For example, pressure limiting valves fitted at the supply meter for outputs of over 500kPa, reduce pressure and flow rate resulting in less water use. This also reduces fatigue to fixtures such as tapware, hot water systems, toilets etc.

Incorporating audit and leaks detections as a key element of the solutions immediately ensures that huge water savings will be achieved immediately. While maintenance is always going to be an ongoing requirement for all equipment – including plumbing – with a little education and planning, it is a sustainable relatively low-cost task that can easily be built into existing programs for both residential property owners and commercial property managers alike. A simple plumbing response can fix a leak immediately ie changing the washers or grinding the valve seat. If that seems onerous, then just remember that a leaking tap can waste as much as 20,000 litres of water a year – enough to fill a pool! And these are just the leaks we can see – many more leaks go undetected as they occur out of sight.

Master Plumbers ACT has extensive experience in managing the operational aspects of water saving programs. The Association managed the ACT Toilet Smart program for 7 years during the last drought and still manages the Queanbeyan-Palerang Council Waterwise program. Both of these programs have been delivered with extremely successful outcomes in both water savings and operational excellence. In managing such programs, we train the plumbers, manage an operations database, allocate jobs to plumbers, manage quality control, and negotiate prices for materials with suppliers and manufacturers. In both cases we also provided insight into the choice of devices to deliver optimal water savings – but that were also cost-effective and uncomplicated to install. Master Plumbers ACT also has the added benefit of a base of 90 qualified and professional trades people who adhere to a Code of Ethics.



Recommendations

Summary of plumbing measures we recommend be implemented to reduce unnecessary water usage in the ACT.

Recommendation 1

Establish a central Plumbing Advisory Forum for Water Saving dedicated solely to water management through innovative and sensible use of plumbing devices.

The Forum would provide overarching advice on new technologies and their applicability to the ACT including (but not limited to) sensor/mix taps, water saving toilets, smart metering etc. The Forum would also advise on the prudent use of existing technologies such as water tanks, flow controls, pressuring and residential piping systems.

Master Plumbers ACT would be well placed to manage this Advisory Forum. We have direct access to our member base of 90 master plumbers, as well as close working relationships and formal partnerships with plumbing product manufacturers who have a strong focus on water savings products and efficiency management, including input into WELS product certification. Membership would also include Government appointed representatives from relevant agencies and ToR developed in close consultation.

Cost – \$150,000 - includes expert plumbing staff, secretariat management, and additional research resources.

Recommendation 2

Educate ACT consumers on water saving measures and devices.

Provide education to customers on plumbing related water saving measures and devices, with a focus on The Water Efficiency Labelling and Standards (WELS) scheme. This education would be conducted by Master Plumber members in the normal course of their work who already see it as integral to their work to provide a broad and holistic water saving approach to customers. In doing so we would work closely with ACT Government and related agencies regarding the information to be disseminated. While plumbers already view water saving as a key aspect of their work, we would undertake to further upskill our members in this area with specialist training around water audits, tune-ups and related devices. The Plumbing Advisory Forum for Water Saving in Recommendation 1 would also become a direct and ongoing source of up to date best practices on plumbing-related water saving measures.

No cost – the work outlined in this recommendation would be absorbed by the Master Plumbers Association and its members.

Recommendation 3

Conduct plumbing audits on residential properties with a focus on leak detection, Water Efficiency Labelling and Standards Scheme (WELS) rated products.

Government rebates for the cost of the audit to be provided to consumers for any rectification plumbing work carried out responding to plumbing advice following audits. In conducting these audits, as well as testing for potential un-seen leaks, plumbers would investigate best options around taps, toilets, showers and water tanks through the Plumbing Advisory Forum for Water



Saving. While it is assumed that most houses now have 4.5/3 litre dual flush toilet systems, this will be one area targeted in the audit as well as WELS rated products.

Cost – rebates to ACT customers of up to a total pool of \$200,000.

Recommendation 4

Conduct plumbing audits and tune-ups of commercial premises in the ACT targeting medium to large enterprises eg retail, hospitality, light industrial etc.

The audits will aim to:

- determine whether any leaks and other inefficiencies are occurring in the property related to all water usage including sanitation, maintenance, mechanical systems, building and business processes, irrigation, and HVC systems
- provide advice on new innovations that will help deliver additional water saving measures (such advice would be grounded in expertise provided by the Plumbing Advisory Forum for Water-saving Expertise - see Recommendation 1)

Cost – ACT Government could provide a rebate on the audit to be recouped by the business/ organisation as a credit for any subsequent rectification work carried out. The cost of each audit would vary depending on the size and business nature of the entity. The businesses would recoup savings in both water and energy use reduction.

Recommendation 5

Prospective ACT tenants of residential properties to be provided with water audits of rental properties.

The ACT Government to mandate that that owners of rental properties (both metered and unmetered) conduct a water saving audit of their property for all new /prospective residential tenancies. Given that the property owner is able to pass on the cost of water to tenants, it makes sense that tenants should have information about the water-usage, and any potential wastages, of the property. Property owners of existing properties to be encouraged to also undertake audits.

Cost – no cost to Government as cost of audits to be borne by property owners.

Recommendation 6

The ACT Government to mandate that owner's corporations, conduct a water saving audit of their common property.

This would include leak testing of common water pipes and irrigation systems. Reducing water wastage would significantly reduce the cost of water bills for owners of apartments where there is a common water meter and no individual water meters.

Cost – no cost to Government as cost of audits to be borne by body corporate.



Recommendation 7

Work with ACT Government to identify and prioritise the ACT and Federal Government properties that could benefit from water saving plumbing audits and tune-ups.

The audits will aim to:

- determine whether any leaks and other inefficiencies are occurring in the property related to all water usage including sewerage and HVC systems
- provide advice on new innovations that deliver water saving measures (advice would be grounded in expertise provided by the Plumbing Advisory Forum for Water Saving)
- investigate whether work undertaken in government facilities as part of the millennium drought initiatives were still operational and effective ie water tanks installed in schools.

Cost – the cost of audits would vary according to size of the business and nature of work. Any costs would be offset by both water and energy savings to be recouped from rectification.

Recommendation 8

Establish a system for identifying and managing a program of water audits and tune-ups of ACT Government's social housing portfolio of 11,600 properties.

- The audits would determine whether any leaks and other inefficiencies are occurring in the property related to all water usage including sewerage and HVC systems.
- In undertaking the audits, plumbers could also provide information to tenants around ongoing water saving and how to detect issues they should report.

Cost – would depend on number of audits to be undertaken and rectification work required. Reducing water wastage would significantly reduce the cost of water bills from social housing properties (as ACT Government, not the tenant, pays for all water property water costs this should result in considerable savings to Government).

Recommendation 9

Hold a consumer and industry-focused Water Saving Trade Show to educate the broader community on water (and energy) savings to be gained from the innovative and sensible use of plumbing related measures.

Master Plumbers ACT would be well placed to manage this project through our close working relationships with major plumbing product manufacturers /suppliers, including those with a strong focus on efficiency and savings around water management. In developing the program, the Plumbing Advisory Forum for Water-saving Expertise would have direct input.

The Trade Show would be held in September 2020 prior to onset of summer.

Cost – \$20,000 - \$30,000



Recommendation 10

Install bubblers and bottle fillers in public areas to reduce the use of single use plastic bottles, disposable cups, and straws.

While this measure would not reduce the Territory's demand on the existing water supply, it would contribute greatly to the ACT Government's proposal to phase out single use plastic items – in this case, straws and water bottles and support the target to reduce emissions for the Territory.

Cost – depending on quantity and type installed - \$20,000 +



Appendix

Water saving technology advancements

While further investigation would be required to investigate the suitability of these new and emerging technologies to the ACT situation, it is clear there are substantial water savings to be had in the Territory through the innovative and sensible use of plumbing solutions across both residential and commercial application.

Commercial

- Touch-free tapware
- Toilets – new developments include standard models with 6 Star WELS rating that save up to 40% water
- Toilets that use innovative measures ie vacuum, macerating
- Time flow taps for public bathrooms
- Pre rinse spray guns for restaurants that use a third of the water of conventional spray guns
- Public showers that run on set times
- Water meters linked to separate billing (for strata)
- Water meters for leak detection and HVAC optimization
- Smart meters and sub meters Data loggers (or measuring and optimising water use and depicting wastage including those with leak detection technology to pinpoint water wastage that may be totally hidden from view
- Metering combined with Smart Building Management Systems to track energy and water consumption
- Hot water recirculation
- Bubblers and bottle fillers

Residential

- Toilets – new developments include standard models with 6 Star WELS rating that save up to 40% water
- Toilets that use innovative measures ie vacuum, macerating
- Integrated water cycle management including storm water
- Infrastructure changes to how water is piped in and out of homes

Footnotes

1. *Icon Water Annual Report 2-18-19*

<https://www.iconwater.com.au/Media-Centre/Reports-and-Publications/Annual-Reports.aspx>

2. *Concerns deepen about Canberra's long-term water future*; Peter Brewer, Canberra Times

<https://www.canberratimes.com.au/story/6443914/surrounded-by-drought-the-canberra-oasis-is-under-careful-watch/>

3. Center for Water-Energy Efficiency at the University of California, Frank Lodge, Director