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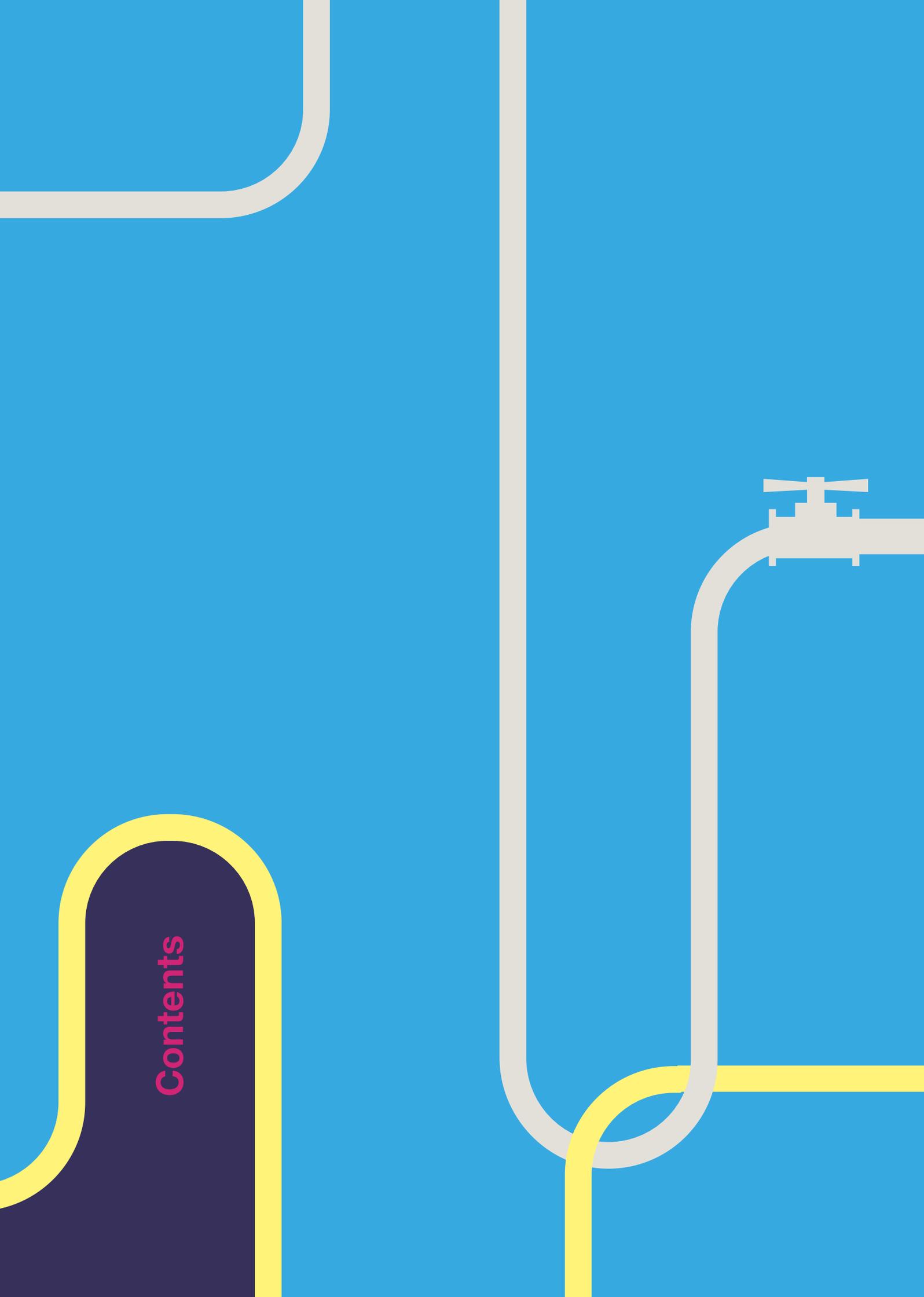


Australian  
Water  
Outlook

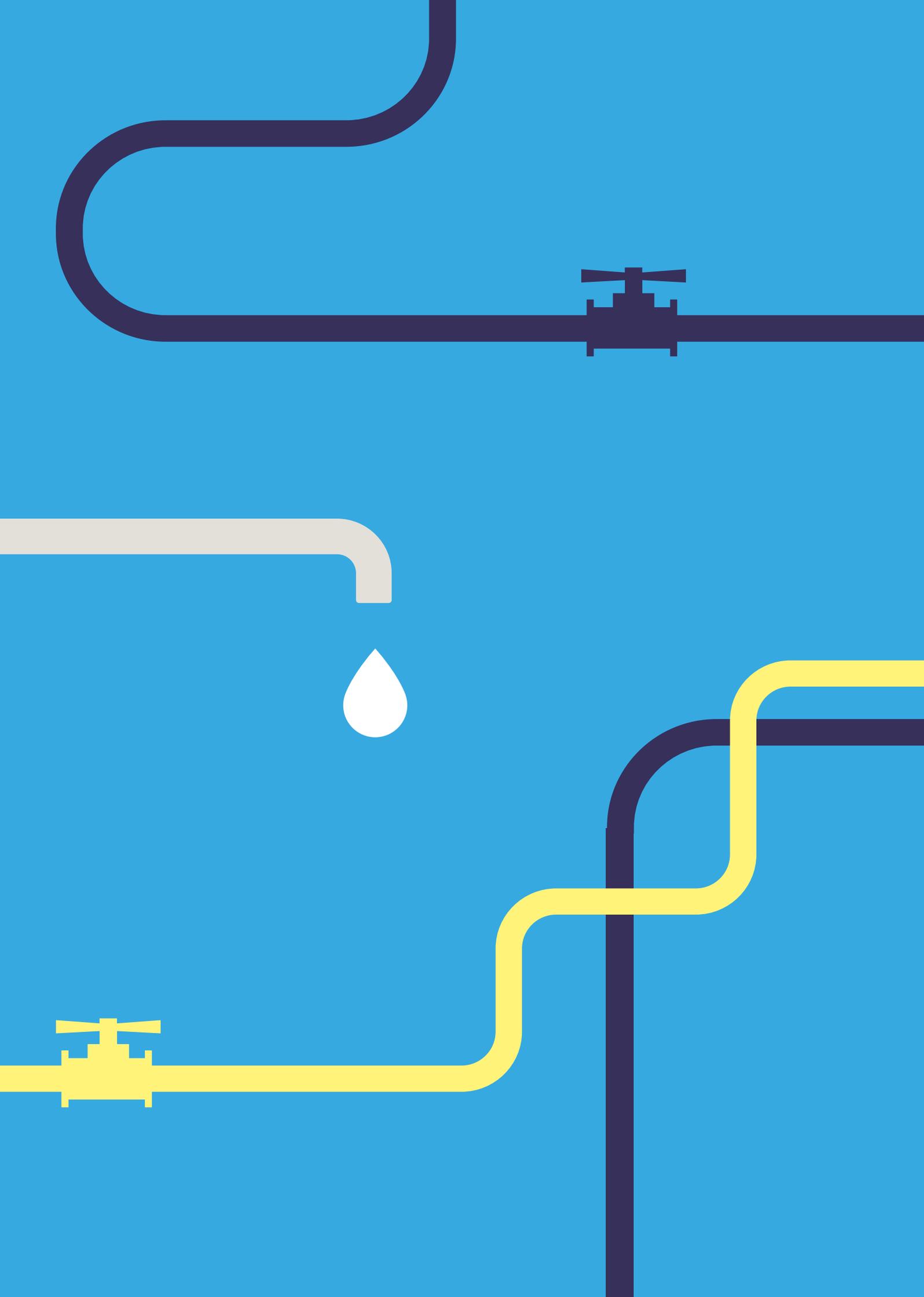


AUSTRALIAN<sup>®</sup>  
WATER  
—  
ASSOCIATION

ARUP

The image features a solid blue background. A white line starts from the top left, curves down, and then continues vertically down the center. A yellow line starts from the bottom left, curves up, and then continues horizontally to the right. A white pipe with a valve icon is positioned on the right side, with a yellow line looping around its base. The word "Contents" is written vertically in pink text inside a dark blue rounded rectangle on the left side.

# Contents





## Executive summary

Australia is facing unprecedented challenges when it comes to how we plan and manage our water resources. The nation's future prosperity is inextricably linked to how well our water resources will meet the needs of a growing population, diversified industries, and protection of the environment. Climate change and rainfall variability are placing increasing pressures on every aspect of the water industry as it grapples with aging infrastructure and increasing urbanisation.

Understanding community and industry attitudes, priorities and perceptions are critical to developing a comprehensive and robust sustainable water policy for Australia. The Australian Water Outlook (the Outlook) aims to encourage more conversations around water security and raise the importance of water to all Australians.

The Outlook presents the findings of the Australian Water Survey which ran online between 18 July and 19 August 2016 and received over 2500 responses.

The Outlook is structured to address the following issues within the sector:

- Water use and efficiency
- The price of water
- Sources and types of water
- The future of water
- Water security
- Business outlook

The report also presents findings for urban, regional and rural areas. State and Territory reports are available on the Australian Water Association website [www.awa.asn.au](http://www.awa.asn.au).

The Outlook provides some contextual information but remains primarily factual and data-driven. The Outlook presents the results and provides a basis for community-informed policy debate. The results presented here enable the Australian Water Association and Arup to work with the water sector and community nationally to ensure the alignment of interests and government policy to drive a sustainable water future.

Highlights include:

- Thirty-three percent of respondents from the community monitor water usage regularly.
- Both the community and industry had high levels of confidence in using alternative water sources for both potable and non-potable uses. Over 90% of respondents had at least some confidence in using alternative sources of water.
- Climate change and drought were seen by both industry (64%, 65% respectively) and community (84%, 86% respectively) as having the largest impact on water, and overall community concern for each impact has increased since last year.
- The water sector is more confident in the abilities of the water sector compared to community feedback across a range of delivery indicators.
- Both industry and community had low confidence in governments' abilities across four key areas including water security, water for urban planning, working together to make the rights decisions for water, and recognising the need for new infrastructure.
- Confidence in water security was alarmingly low with only 4% of industry and 3% of community respondents completely confident that Australia currently has sufficient water security to meet all social, environmental and economic needs.

# Industry



53%

were not confident  
Australia currently  
has sufficient water  
security



94%

were concerned  
about water  
shortages in Australia

water security



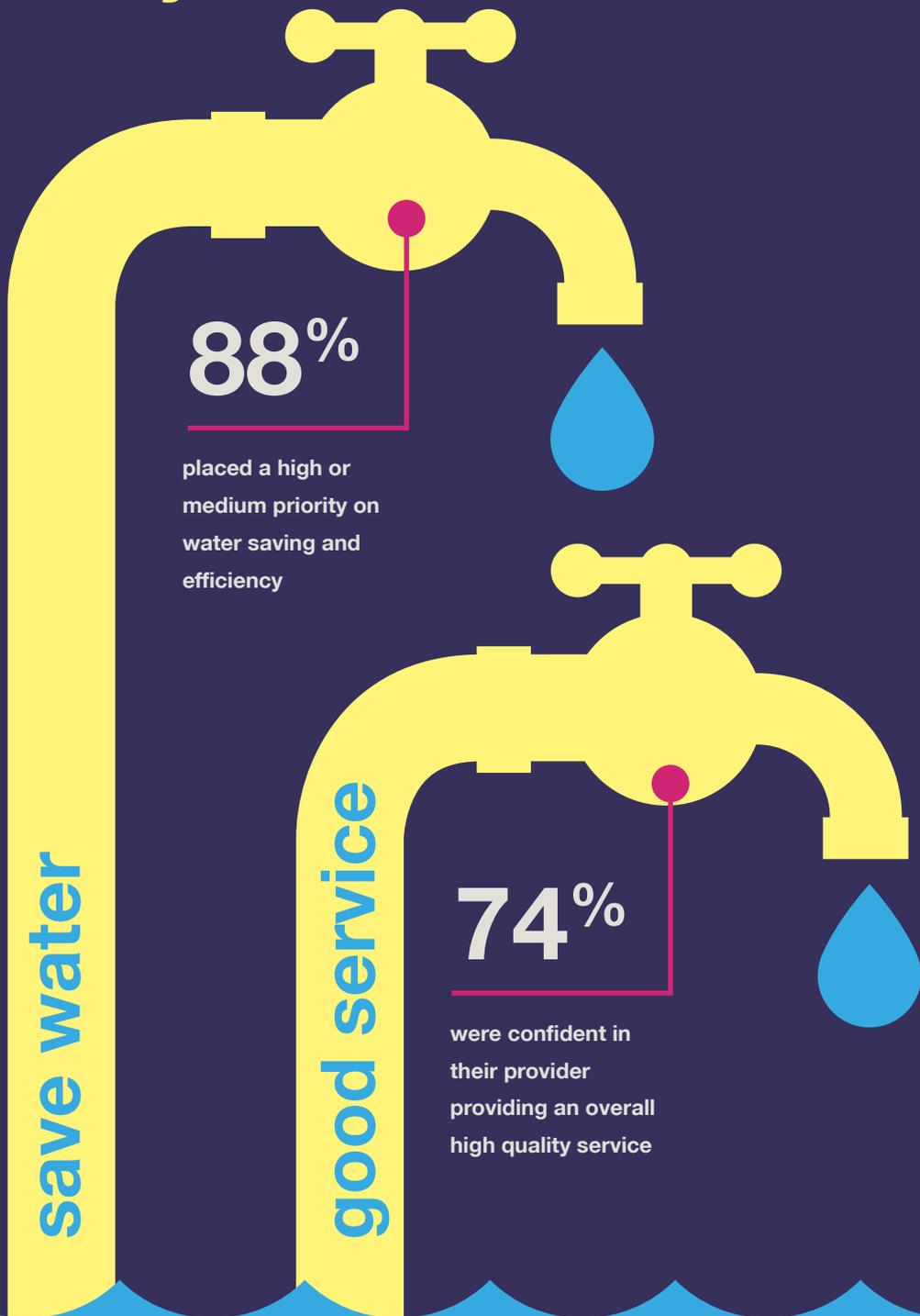
97%

thought there was at least a  
moderate amount of new investment  
in water infrastructure required

90%

rated the importance of improving  
the efficiency of operations as  
critical or important

# Community



**74%** would be willing to spend more to become more water efficient

**71%** were not confident governments are working together to make the right decisions for Australia's water resources



# Water use and efficiency

Water usage and efficiency in Australia is an ongoing discussion point amongst the community and the water industry. In 1994, the Council of Australian Governments (COAG) set in motion a series of reforms and strategies to address a range of issues associated with water use, efficiencies and service providers. The key target underpinning this shift in focus has been to make Australia’s water usage sustainable across sectors, regions and the environment.

Since 1994, changes in the way water is used and discussed in Australia are evident. Despite Australia’s population increase over the past 20 years, water consumption has fallen. Water usage patterns continue to vary from sector to sector. Agriculture is responsible for the most water consumption in Australia and is susceptible to reductions in water availability such as those experienced during recent droughts. By contrast, household consumption of water does not vary greatly from year to year and creates a stable demand for drinking quality water. The household sector represents the highest expenditure on water of all sectors.

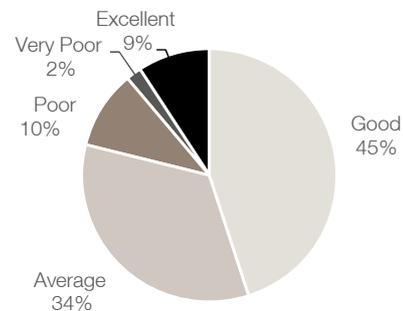
A range of programs, rebates and initiatives have been implemented in recent times to improve water use efficiency in the community. From an industry perspective, more efficient water supply provides a range of fundamental benefits and improvements.

## Community efforts to save water

The survey results show that the community believed their efforts to save household water were generally good or average with only 4% of respondents identifying their efforts as poor. This was generally matched by the industry responses although to a slightly smaller extent.

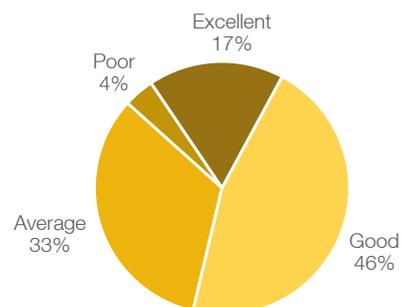
### Industry

13. From a water industry perspective, how would you rate water consumer’s efforts to actively save water and make changes in how much water they use?



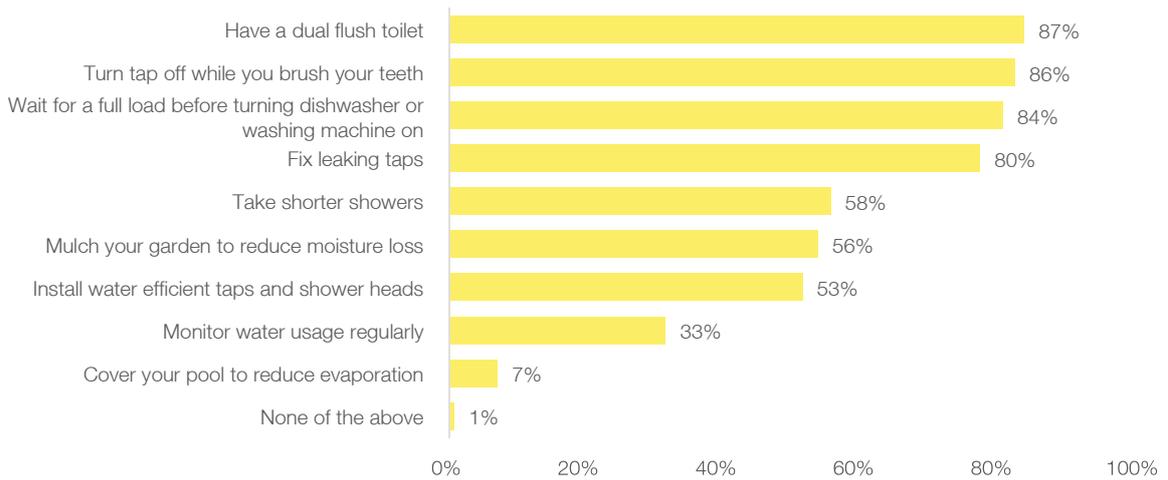
### Community

15. How would you rate your household’s efforts to actively save water and make changes in how much water you use?

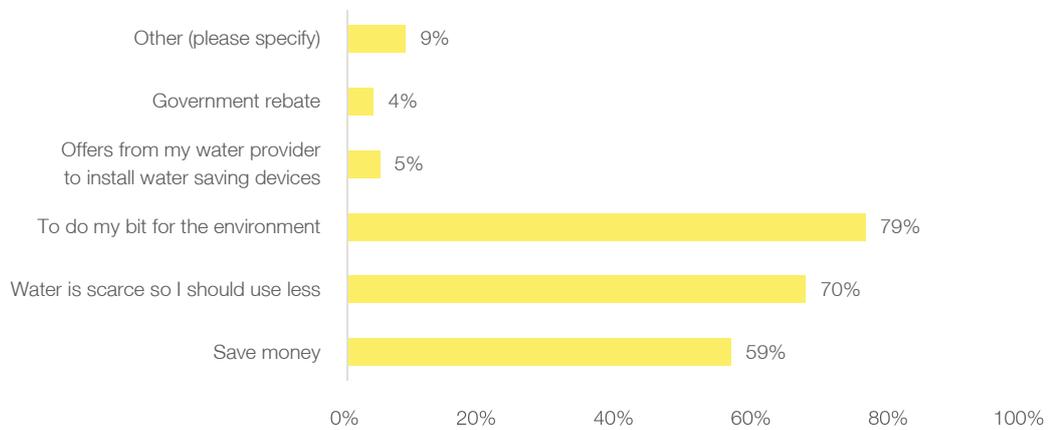


Less than 1% of the community reported taking no action to save water. The vast majority of community respondents said they took a variety of water saving actions including fixing taps, installing water efficient devices, mulching gardens and actively adjusting water use habits.

Community 13. Which of the following things do you do in your home to save water?



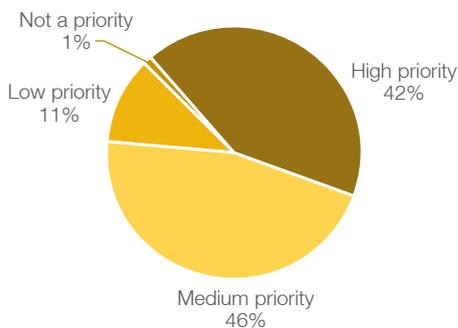
Community 14. What motivates you to save water? (select all that apply)



Saving water and water efficiency were a medium or high priority for 88% of community respondents. Generally the importance placed on water was higher among the older generations; 19% of 18-30 year olds reported water as a low priority compared to 4% of those over 60.

**Community**

16. What level of priority do you give to saving water and water efficiency?

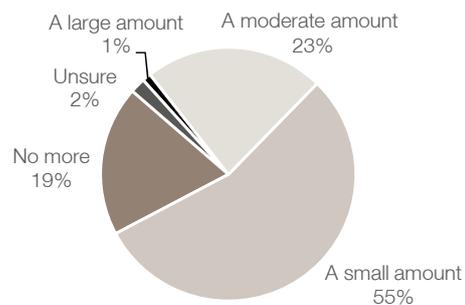


**Community willingness to spend more**

Seventy-four percent of the community reported a willingness to spend more to become more water efficient. Industry respondents mainly predicted this (79%) although they slightly underestimated the additional amount the public would be willing to pay. Thirty-six percent of the community were willing to pay at least a moderate amount more, whereas only 24% of industry respondents predicted this.

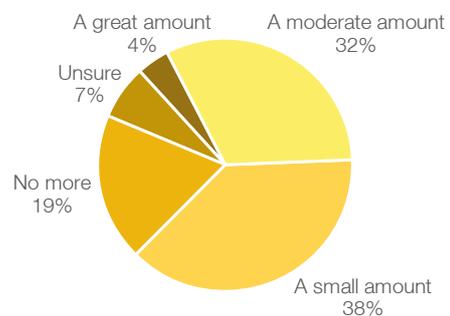
**Industry**

14. How much more do you think consumers would be willing to spend to become more water efficient?



**Community**

17. How much more would you be willing to spend to become more water efficient?



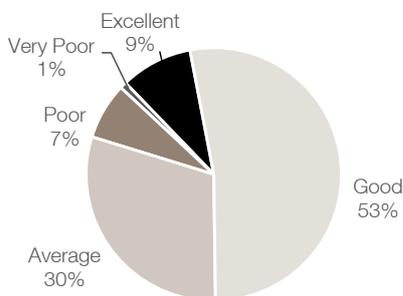
### Water sector efficiency

Industry respondents predominately (62%) believed the water sector’s efforts to save water and improve water use efficiency were above average (good or excellent) and only 8% of respondents cite efforts as below average (poor or very poor).

From a community perspective, just over a quarter (26%) rated the support they had received from their water provider to become more water efficient as above average. Another 26% thought it was below average (poor or very poor) and 22% were unsure. The latter may represent an opportunity for additional communication and/or assistance so as to meet the expectations of the community at the household level.

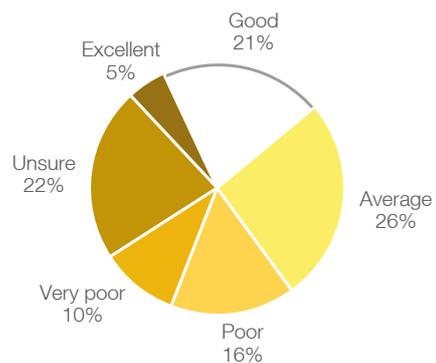
#### Industry

15. Now thinking about the water sector itself, how would you rate the water sector’s efforts to save water and improve water use efficiency?



#### Community

18. How would you rate your local water provider on the level of support they have given your household to become more water efficient?

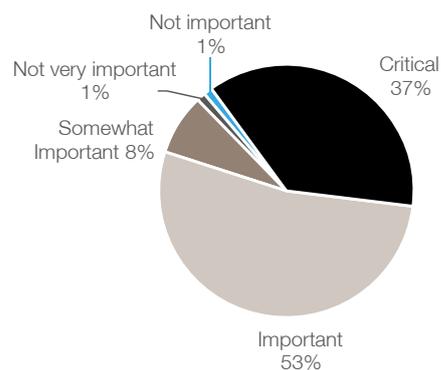


### Improving efficiency

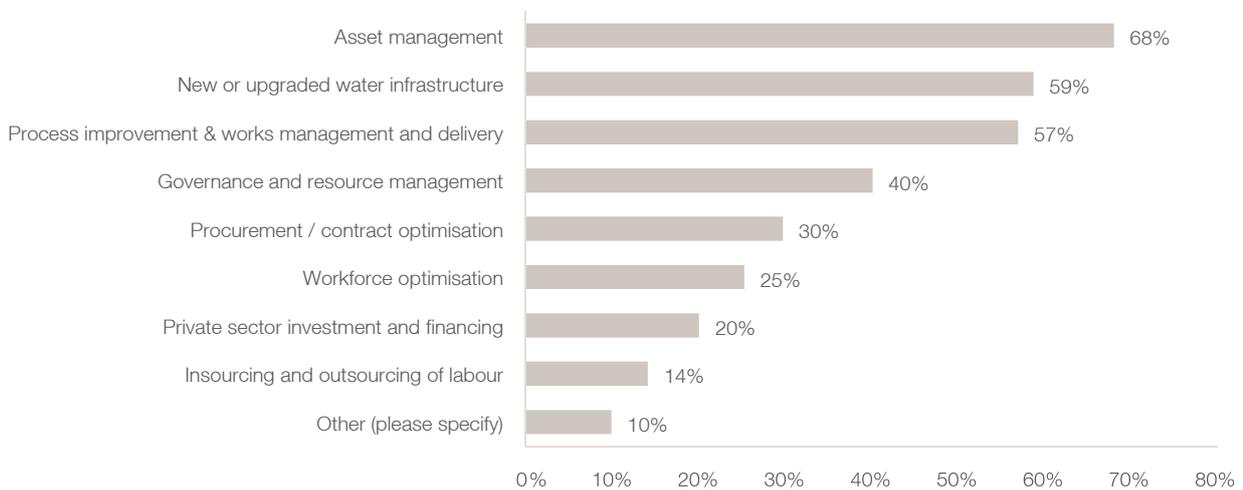
#### Industry

Industry respondents see improving efficiency of operations as a pivotal exercise with 37% of respondents seeing it as ‘critical’ and 53% as ‘important’. Asset management was the main area identified that could assist in driving efficiency.

16. How would you rate the importance of improving the efficiency of operations in the water sector?

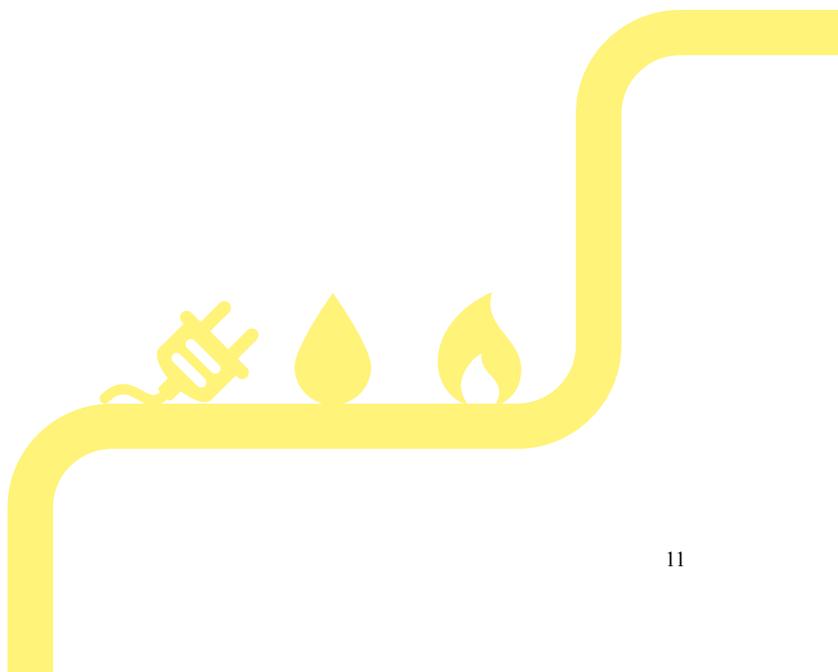
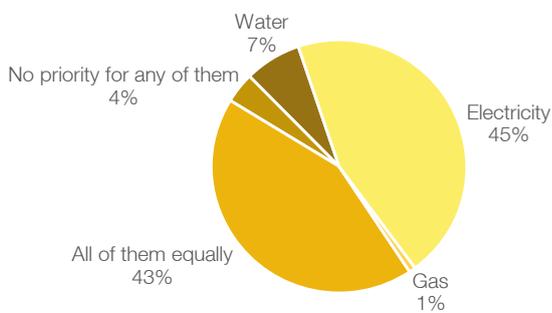


17. What are the main areas you think the industry could improve to assist in driving efficiency?  
(Select all that apply)



### Community

Only 7% of community respondents listed water as their greatest priority for ensuring household efficiency and cost savings. Electricity represented the greatest priority at 45%, potentially due to its high share of the consumer’s weekly bill. Interestingly, 18-30 year olds reported an even lower rate with only 3% citing water as their greatest priority in terms of ensuring household efficiency and cost savings (which is most likely due to the lower cost of water compared to electricity).





## Price of water

Pricing of any product or resource, including water, will influence consumer behaviour, consumption and the value people place on it.

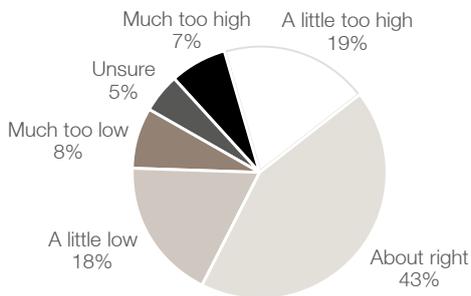
A majority of community respondents reported that saving money was a driver for saving water. Nearly half of the respondents in last year's survey stated that the price of water affected their decisions about using water and a third of respondents suggested water should be priced higher to reduce people's use. Yet, in contrast, over a third of last year's respondents thought that water was already over-priced.

The 2016 Australian Water Outlook investigated industry opinions on the price of urban and rural water, and how the community views their water bills. The Outlook also investigated these issues from the community's perspective and asked how water costs affected water consumption.

### Price of urban water

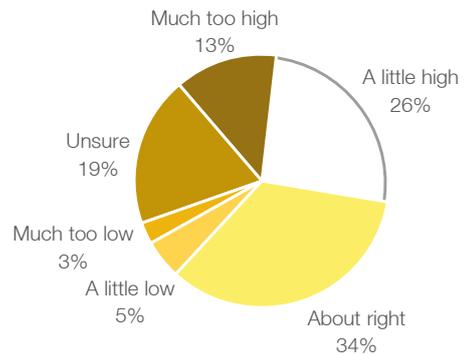
Overall, how would you describe the price of urban water in your State/Territory?

The Australian water industry appears well informed about the price of urban water, with only 5% of respondents stating they were ‘unsure’ about the price. The most common response among industry respondents (43%) identified the price to be ‘about right’.



How would you describe the price of water at your usual residence?

In contrast to industry, on the whole the community thought the price of water was too high, with 39% saying it was a little high or much too high, which is similar to the results from 2015. Only 8% of respondents thought the price was too low, and 34% thought it was about right.



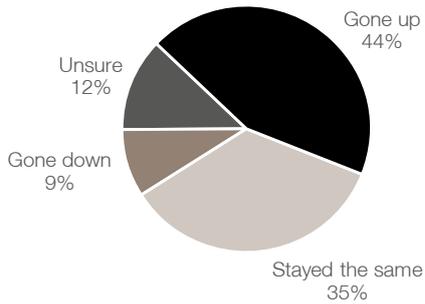
Deeper analysis of industry responses shows how a large portion of South Australian respondents (43%) thought the price of urban water was ‘a little high’ or ‘much too high’. Fifty-eight percent of industry respondents in Tasmania thought that the water price was ‘about right’, suggesting Tasmanians were mostly content with the price of water.

South Australian community respondents were the most informed and most concerned about the price of urban water with more than 60% of the South Australian community saying the price of water was ‘a little high’ or ‘much too high’.

### Community water bills

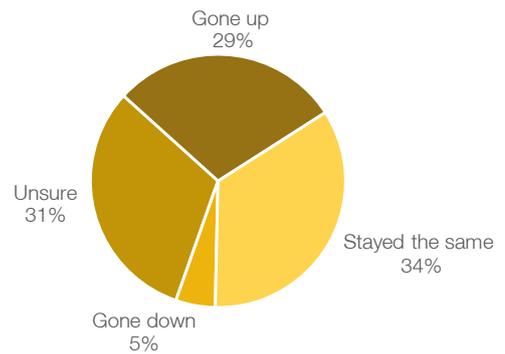
In general, how do you think consumers water bills have changed compared to this time last year?

A significant share of industry respondents (44%) thought that the community's water bills had 'gone up' in the last year.



How has your water bill changed compared to this time last year?

Community respondents were on the whole relatively unaware about the changes in their water bill, with 31% of respondents 'unsure' about changes in their water bill from last year.



There is a shared perception across the community and industry that prices are similar or higher than 12 months ago.



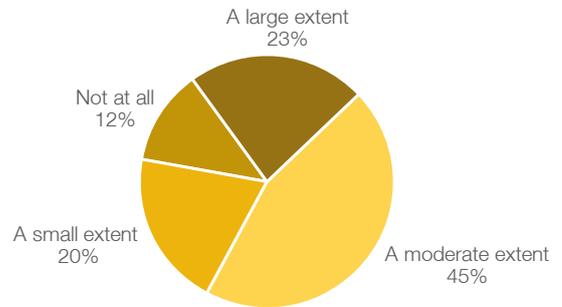
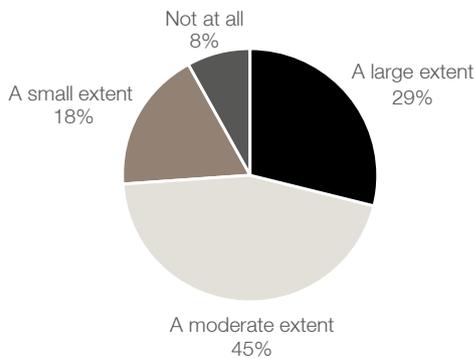


### Reflection of scarcity

Many Australian cities have experienced significant drought conditions over the last decade, resulting in water restrictions being imposed at different times. To what extent do you think prices should be used to reflect the scarcity of water availability?

Close to a third of industry respondents (29%) said they thought prices should reflect the scarcity of water to a large extent, and a further 45% support a moderate extent.

More than two thirds of community respondents (68%) thought that prices should reflect the scarcity of water to a large (23%) or moderate extent (45%), and a further 20% to a small extent.

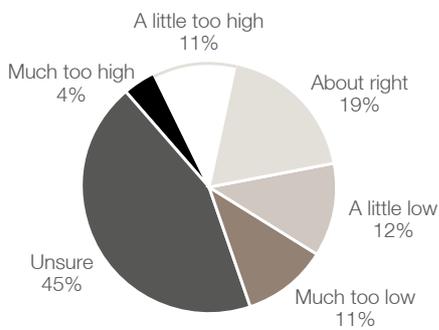


The results were very similar for industry and community, with slightly more industry respondents (29% vs 23%) supportive of prices reflecting scarcity to a large extent. Only 8% of industry and 12% of community respondents did not believe prices should reflect the scarcity of water availability.

### Price of irrigation and bulk water

Overall, how would you describe the price of rural (irrigation and bulk) water in your State/Territory?

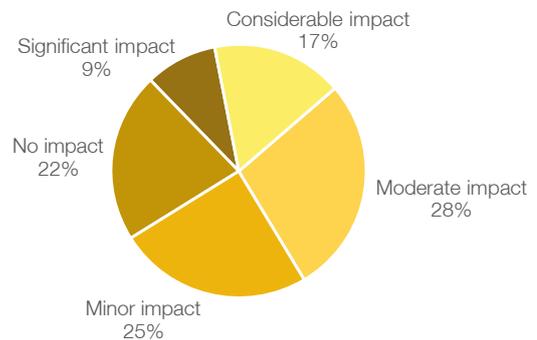
Many of the industry respondents (45%) were unsure about the price of rural water. This uncertainty was mainly driven by urban respondents where 50% were unsure; however high uncertainty was also evident in industry members in regional areas (32%) and rural areas (24%). The limited awareness around broad industry issues is investigated further in the business and industry section.



### Cost impacts on water use

Does the cost of water have an impact on how much you use?

Twenty-two percent of the community said the cost of water had no impact on how much water they used. Over half (54%) said their water use patterns were moderately to significantly impacted by the cost of water.

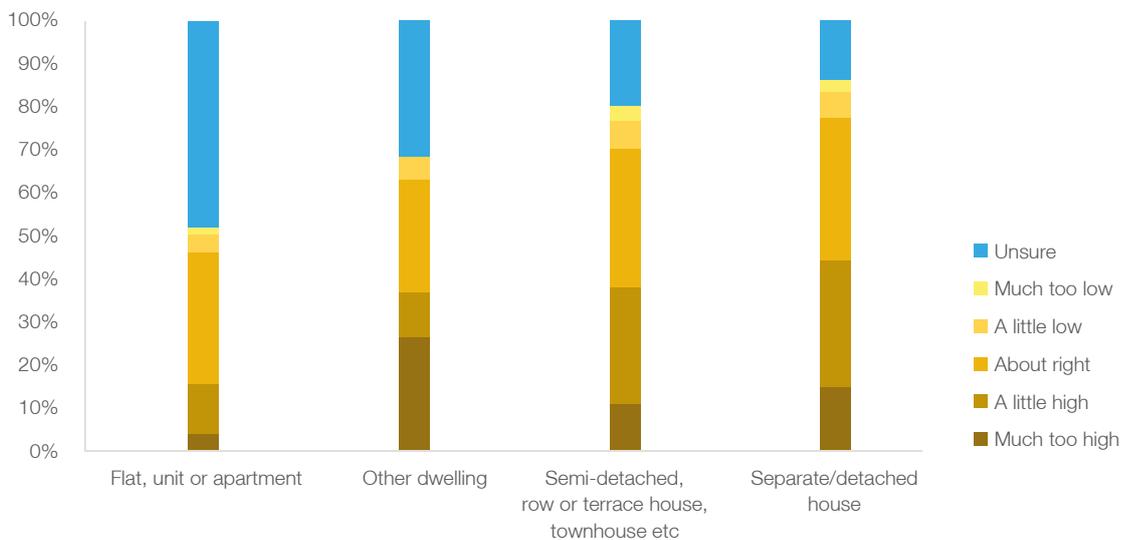


A jurisdictional analysis of the impacts of water costs provides an interesting insight. South Australian community members were most significantly affected by the price of water with over 40% of the community saying their water usage was significantly or considerably impacted by price.

### Community perspective by dwelling type

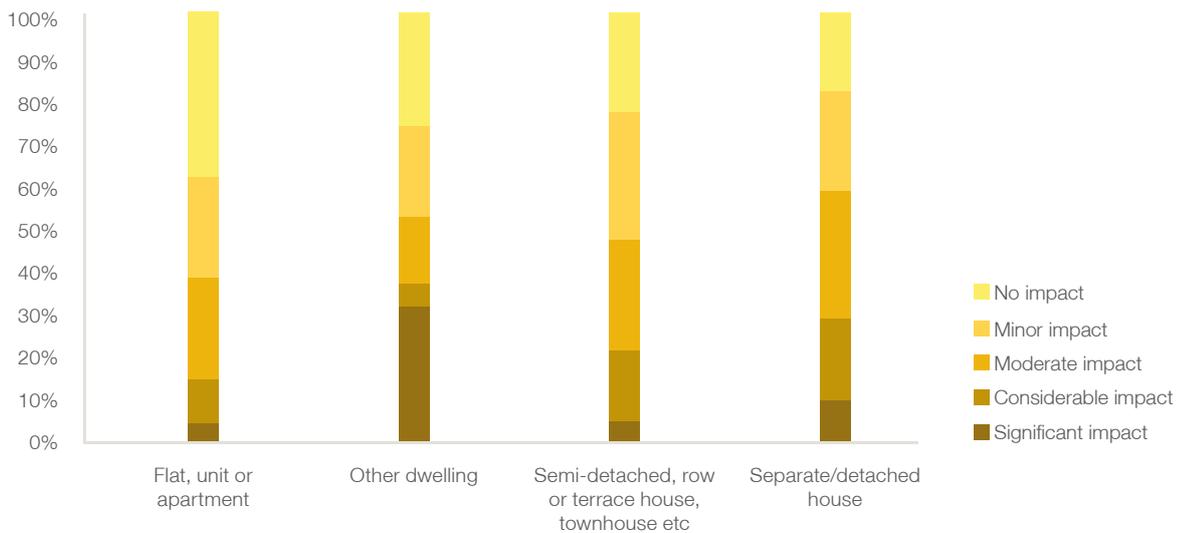
In general, how do you think consumer's water bills have changed compared to this time last year?

The type of dwelling affected community respondents' knowledge and perceptions about the price of water. Almost half of respondents living in flats, units or apartments were 'unsure' about the price of water bills. This was most likely due to the fact that most do not receive a water bill and may explain why water use efficiency is not a high priority for 18-30 year olds compared to other utilities. In comparison, 44% of respondents who lived in separate houses thought that water was over-priced and only 14% were 'unsure'.



Does the cost of water have an impact on how much you use?

Unsurprisingly, respondents' water use was impacted by cost to varying degrees, in line with knowledge and perceptions about the price of water. Those respondents who live in flats, units or apartments, stated there was 'no impact' (38%) or 'minor impact' (23%). A majority (58%) of those living in free-standing houses reported their water usage was moderately to significantly impacted by the cost of water.





↑ RAW WATER

## Sources of water

With water arguably the most important resource for Australia's social, economic and environmental sustainability, it is imperative that a range of water sources are utilised to ensure the security of supply. Currently eastern Australia is heavily reliant on surface water and dams, while groundwater is important in the west and north. Desalinated water is also used as a supply source in many Australian capital cities while recycled water has traditionally been seen as an unfavourable water source.

The Outlook sought to examine the level of awareness, attitude and acceptance about five key alternative water sources.

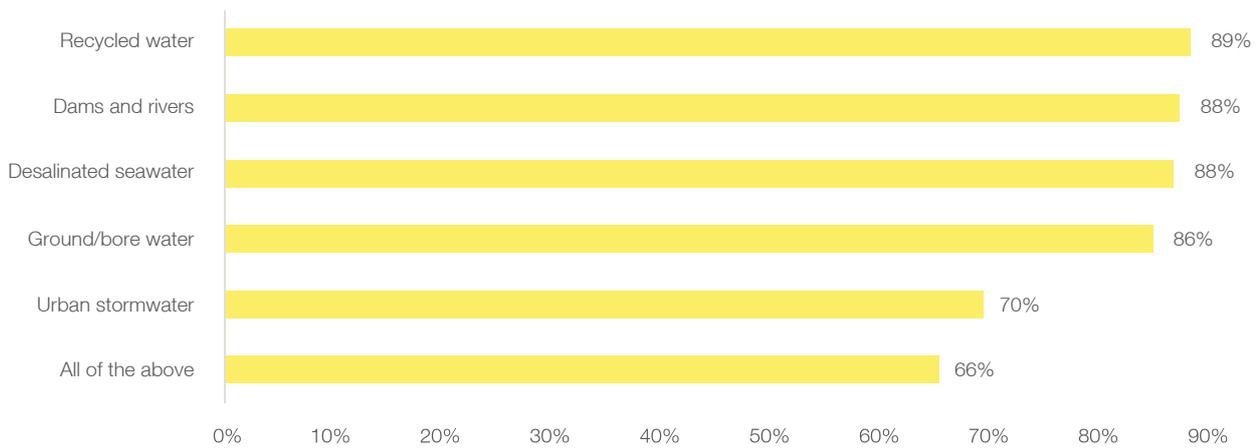
The importance of utilising different water sources was recognised across all States and Territories, and community awareness of these sources was reasonably high with two thirds of respondents aware of all five types.

There was strong industry and community confidence in utilising different sources of water for drinking and non-drinking purposes. The highest confidence was in dams and rivers, then desalinated seawater and ground/bore water, Western Australia being the most confident of any State/Territory for all these sources of water. While the level of industry confidence was slightly higher than the community's across all sources, they both ranked the sources in the same order when it came to drinking water. Both industry and community recognised the costs of alternative sources and a large majority were willing to pay more to ensure a sustainable supply.

### Awareness of alternative water sources

Nationally two thirds (66%) of community respondents had heard of all five of the water sources and a high level of awareness was demonstrated across all water sources.

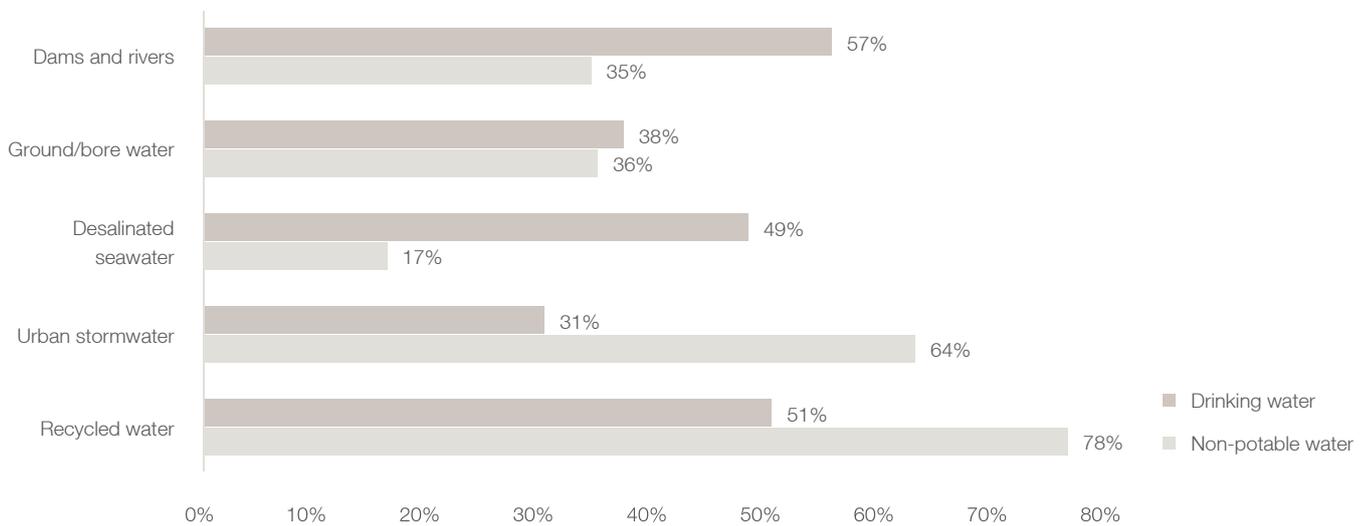
To ensure a sustainable water supply for the future, Australia needs to use a range of water sources. Have you heard of any of the following?



### Importance of alternative water sources

There were differences in the importance attributed to alternative water sources between drinking and non-potable uses. The most important source of drinking water identified was dams and rivers, whereas recycled water was identified as the most important source of non-potable water. These results show the industry may have preconceived perceptions about how different water sources should be used.

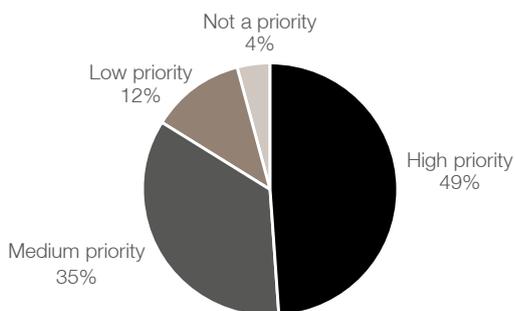
In your State or Territory which alternative water sources are important to ensure a sustainable drinking water / non-potable water supply for the future? (Select all that apply)



### Industry opinions on managed aquifer recharge

Eighty-four percent of industry respondents considered managing aquifer recharge as a high or medium priority. There were significant variations by State with 80% of Western Australians seeing it as a high priority in contrast to Tasmania (20%) and Australian Capital Territory (28%).

What priority should be given to manage aquifer recharge in your State/Territory?

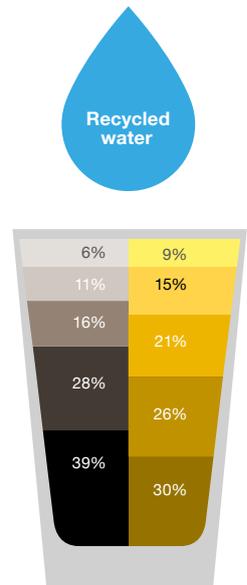


# Alternative water sources

## How confident would you be with these as a source of drinking water provided the water was treated to the required drinking standard?

As a source of drinking water, 93% of industry respondents were completely/mostly confident in dams and rivers, followed by desalinated water (88%), ground/bore water (82%), recycled water (67%) and then urban stormwater (57%).

Nationally, 83% of community respondents were confident (completely/mostly) with dams and rivers, followed by desalinated water (72%), ground/bore water (70%), recycled water (56%) and then urban stormwater (47%) for drinking sources; the same order as industry.

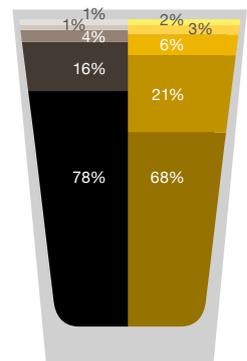


## How confident would you be with these as non-potable water?

Nationally 94% of industry respondents were completely or mostly confident using recycled water for non-potable uses. This was higher than the confidence for dams and rivers (93%), ground/bore water (91%), urban stormwater (90%) and desalinated seawater (89%).

Unsurprisingly, overall the community had more confidence with using different types of water for non-drinking purposes than for drinking. Ninety-three per cent of respondents were completely or mostly confident with dams and rivers, followed by recycled water (89%), desalinated seawater (88%), ground/bore water (88%) and urban stormwater (87%).

The results show that both the industry and the community are overwhelmingly supportive of using alternative sources of water for drinking purposes, with the exception of urban stormwater. Both industry and community were also supportive of using all five alternative sources of water for non-drinking purposes.

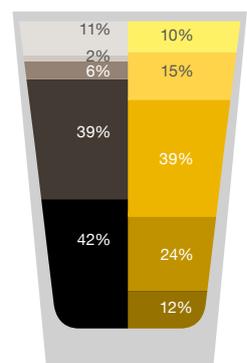


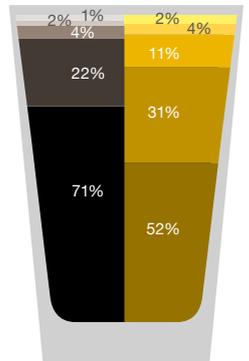
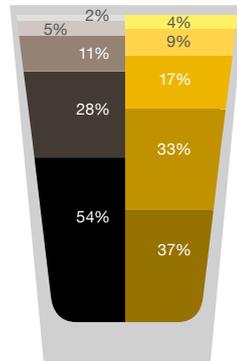
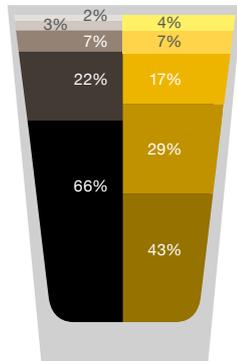
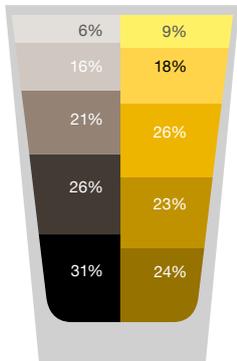
## How would you describe the current cost of providing these alternative water sources?

Desalinated water was seen by industry respondents as a high cost source of water (78%) while most respondents saw dams and rivers as low cost.

## Having a range of water sources is important for a sustainable water supply into the future but may cost more. How willing are you to pay more for each water source to ensure a secure future supply?

Community responses indicate there is a willingness to pay for alternative water sources in general, with 71% willing to pay at least somewhat more. However there is no strong preference in terms of willingness to pay between water sources.





**Industry**

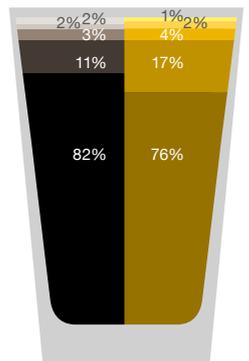
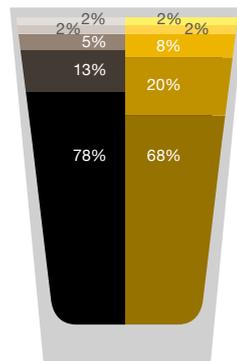
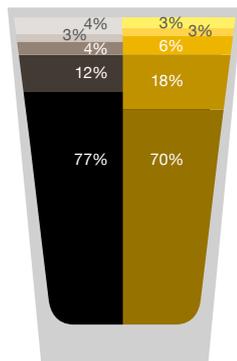
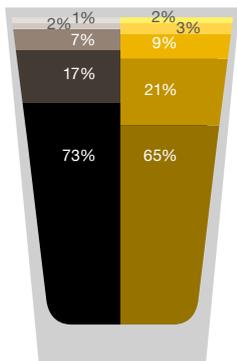
- Not confident at all
- Not very confident

- Somewhat confident
- Mostly confident
- Completely confident

**Community**

- Not confident at all
- Not very confident

- Somewhat confident
- Mostly confident
- Completely confident



**Industry**

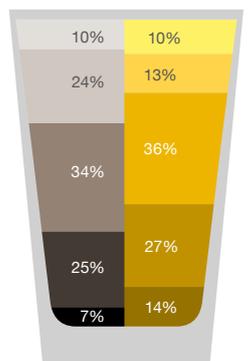
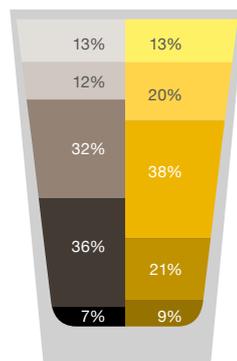
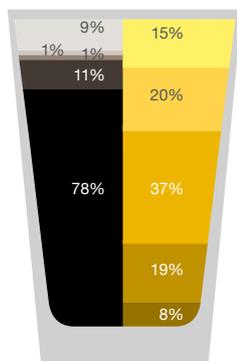
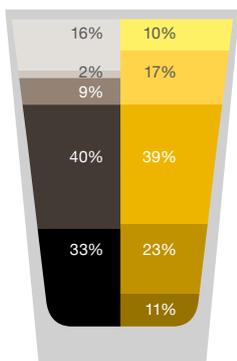
- No sure/Don't know
- No different to current water costs

- Low cost
- Medium cost
- High cost

**Community**

- Not willing at all
- Not very willing

- Somewhat willing
- Mostly willing
- Extremely willing



**Industry**

- No sure/Don't know
- No different to current water costs

- Low cost
- Medium cost
- High cost

**Community**

- Not willing at all
- Not very willing

- Somewhat willing
- Very willing
- Extremely willing



## Future of water

Industry, community and government all have a significant role to play in shaping Australia's approach to sustainable water management. Getting water policy settings and investment plans right today is crucial if Australia is to achieve a high level of water security for the future.

The survey sought to understand attitudes and beliefs about water shortages, impacts on water and views on the actions being taken by water providers and governments to ensure a sustainable water supply.

Nearly 70% of community respondents reported there were no shortages in their local area; this ranged from 83% in Tasmania to 27% in Western Australia.

Both industry and community respondents were concerned about water shortages particularly in relation to the whole of Australia, with concern being slightly higher in the community at the national, state and local level.

Climate change and drought were seen by both industry (64%, 65% respectively) and community (84%, 86% respectively) as having the largest impact on water, although community concern was significantly higher than industry.

The water industry respondents were significantly more confident in the capabilities and service of water providers compared to the community, with 63% of industry completely confident it provided an overall high quality service compared to just 18% of community respondents.

## How concerned are you about water shortages in your State or Territory?

### Industry

- Not concerned at all
- Not very concerned

● Somewhat concerned

● Very concerned

● Extremely concerned

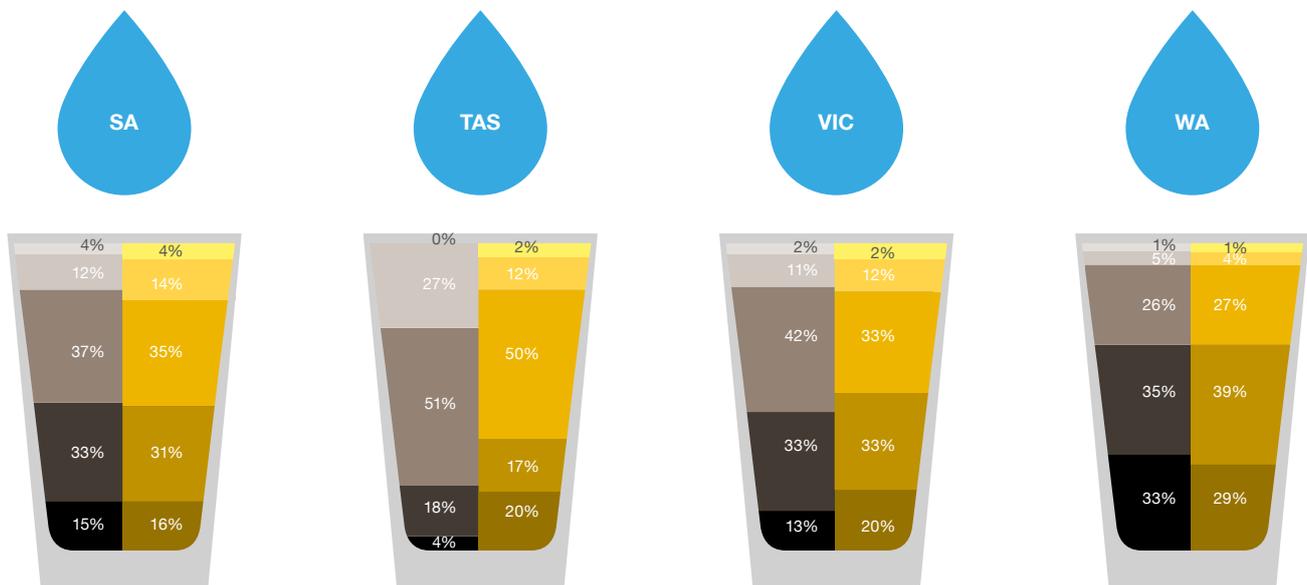
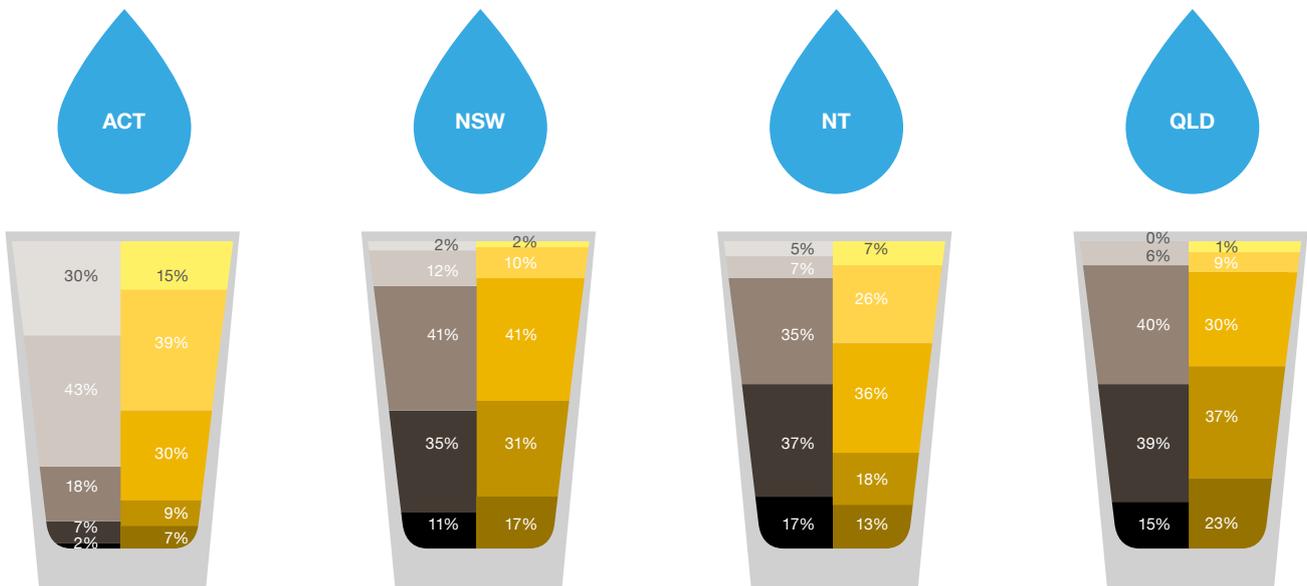
### Community

- Not concerned at all
- Not very concerned

● Somewhat concerned

● Very concerned

● Extremely concerned

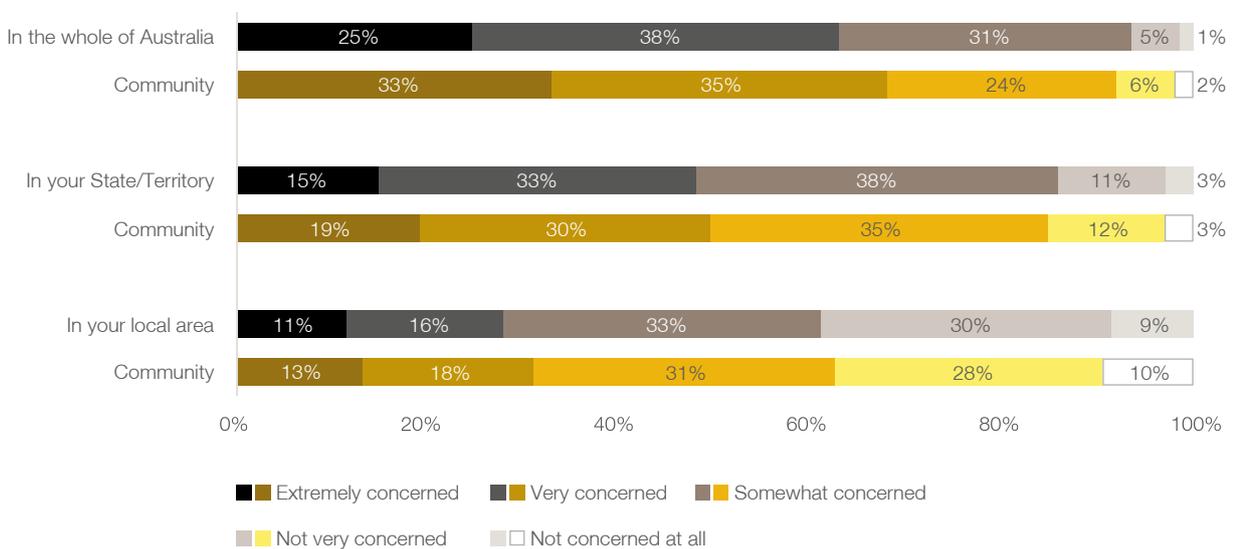


## Water shortages

How concerned are you about water shortages?

Concern about water shortages among industry respondents was highest when asked to consider the whole of Australia (94%), lower at the State/Territory level (86%) and lowest for the local areas (60%). There was significant variation across States in relation to water shortages, with Western Australian respondents the most concerned overall.

Community concern about water shortages increased from 62% at the local level to 84% at the State level, and were highest for Australia as a whole (92%), with 33% extremely concerned. While the wording of the question was slightly different to the previous year, concern in 2016 declined in each State except Tasmania. Overall Western Australia remains the most concerned, as they were last year, about water shortages.



How concerned are you about the following impacts on water in your State or Territory?



Industry

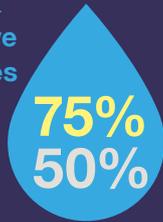


Community

Floods



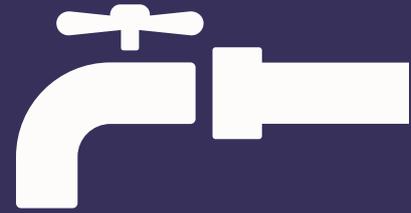
Mining & extractive industries



Population Growth



Drought



Bushfires

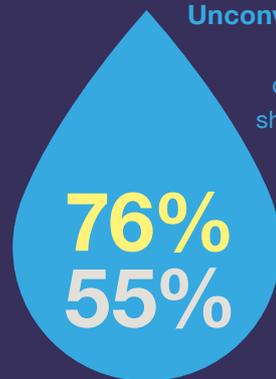


Intensive agriculture

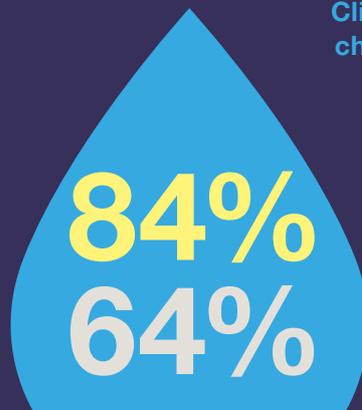


Unconventional gases

coal seam, shale & tight



Climate change



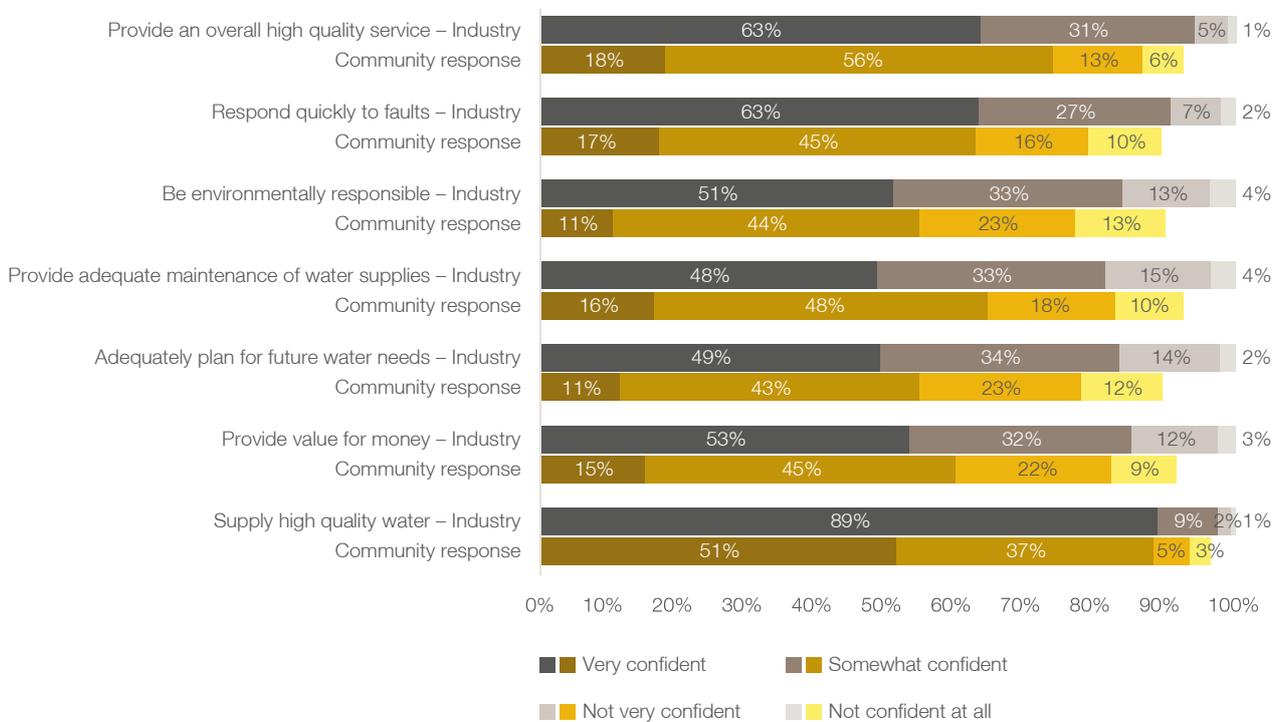
Reported values are for respondents who were very concerned and somewhat concerned.

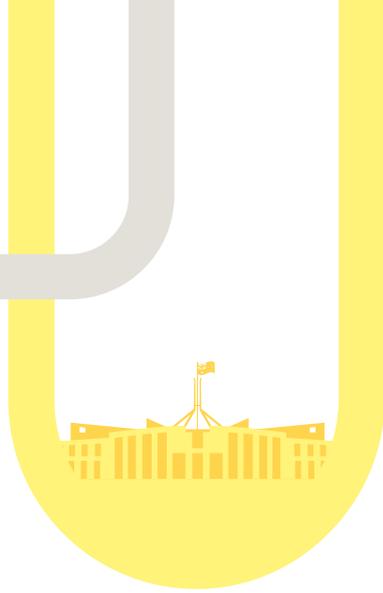
### Confidence in providers and the sector

When asked about confidence in water providers, industry respondents reported having a much higher level of confidence in the providers than community respondents. Industry respondents were most confident in the water industry supplying high quality water (89% very confident), while just under half (48%) were very confident the water industry provides adequate maintenance of water supplies.

Overall community respondents were most confident about water providers being able to provide high quality water, with 51% being very confident. The community had low confidence in their provider being environmentally responsible, and low confidence in them adequately planning for future water needs (both 11% very confident).

How confident are you that the water sector provider in your State/Territory is able to do the following:



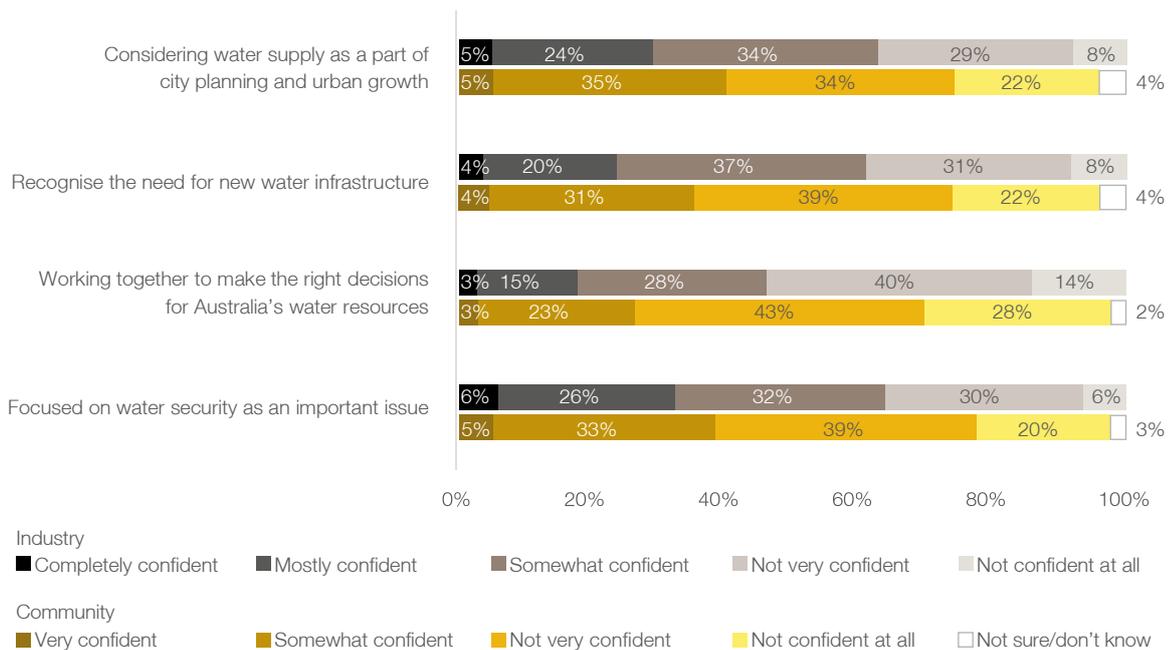


### Confidence in government

Overall, industry was least confident in governments working together to make the right decisions for Australia’s water resources (54% not very/not confident at all). This is in line with community sentiments and implies that the industry and the community want governments at all levels to unite and have a focused and coordinated national approach to water. Only 6% of industry were completely confident that governments were focused on water security as an important issue, lower still for governments recognising the need for new water infrastructure (4%) and only 5% were completely confident that governments were considering water supply as part of city planning and urban growth.

More than half of all community respondents were not very/not confident in governments’ action on water. Only 5% were very confident that governments were focused on water security as an important issue and were considering water supply as part of city planning and urban growth. Fewer still saw governments working together to make decisions about water resources (3%) and recognised the need for new water infrastructure (4%). This low confidence is consistent with the 2015 findings, where only 34% strongly agreed/agreed that ‘authorities were taking action to make sure that we have enough water in the long term.’

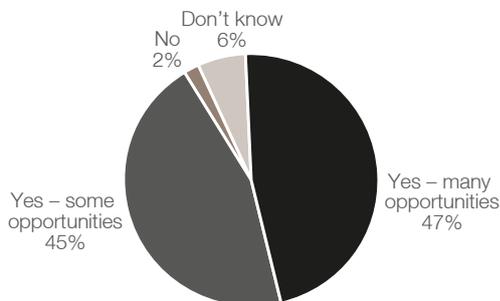
How confident are you that governments (local, state and federal) are:



### Coordinate regulation

Do you think there are opportunities to better coordinate the regulation of water across economic, health and environmental areas within your jurisdiction?

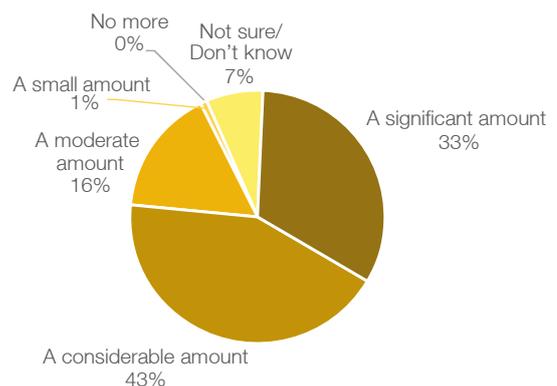
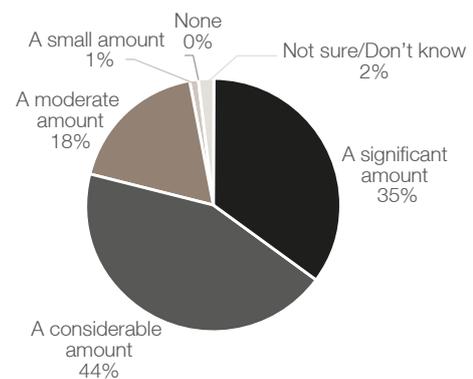
Overwhelmingly, 92% of industry respondents across all States and Territories thought there were at least some opportunities to better coordinate the regulation of water across economic, health and environmental areas. This is an interesting result in light of the low confidence in government action on water.



### New infrastructure

How much new investment in water infrastructure do you think is needed to ensure Australia has a secure water supply in 20 years?

Nationally, 91% of community respondents and 97% of industry respondents thought there was at least a moderate amount of investment in new infrastructure required to ensure Australia has a secure water supply in 20 years, and is clearly a common priority across Australia. Of community respondents, uncertainty was highest among the younger generation with 12% of 18-30 year olds reporting they were unsure about the need for new infrastructure compared to an average of 7% for other age brackets.

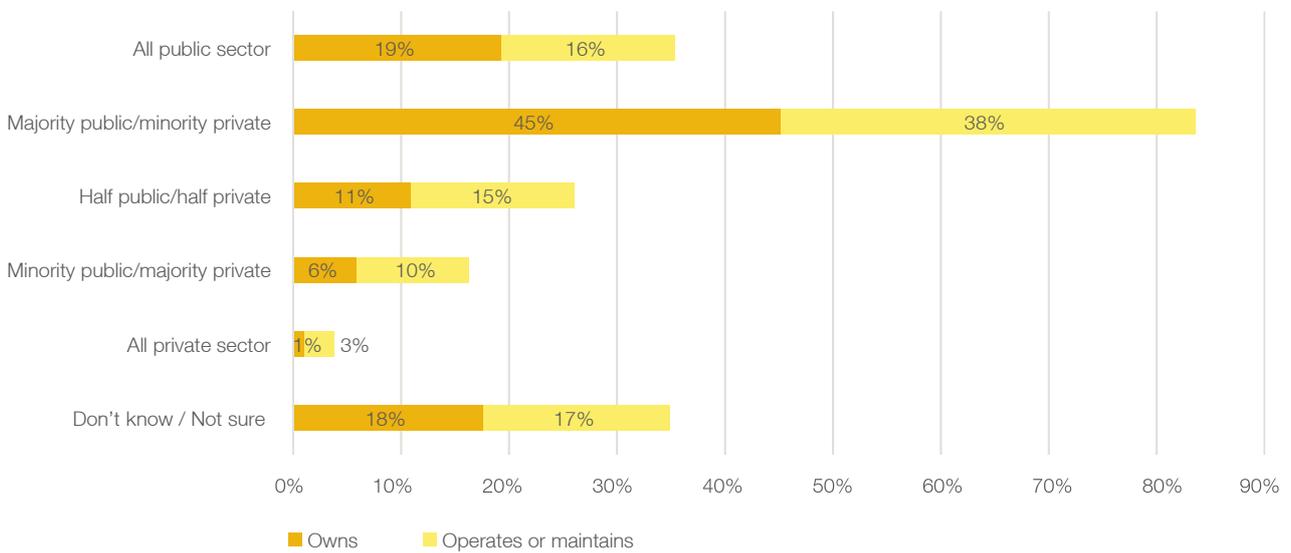


### Community knowledge of infrastructure owners/operators

Q35. Which statement best reflects your understanding of who owns water supply infrastructure?

Q36. Which statement best reflects your understanding of who operates or maintains water supply infrastructure?

Nearly half (45%) of community respondents believed that infrastructure was majority public/minority private owned. Around a third of Tasmanians (31%) and Western Australians (37%) believed that water infrastructure was all publicly owned, compared to 19% nationally. The response was similar for the understanding of infrastructure maintenance and operations, where 38% believed the majority was public and minor private sector, when in fact it is the opposite, and the majority of Australia’s water infrastructure is operated or maintained by private organisations.



**“Lack of  
investment in  
infrastructure will  
be costly in the  
long run”** - Industry comment



## Water security

Water is at the centre of economic and social development; it is vital to maintain health, grow food, generate energy, manage the environment, and create jobs (World Bank, *Water Overview*, April 2016). It is a major driver of Australia's life and prosperity, and the Australian community and its leaders cannot afford to be complacent about water security in urban, regional, rural or remote communities.

The Australian Water Association's members consider water security their number one priority and defines it as *the certainty the Australian community can have that its water needs will be met into the future on an economically, socially and environmentally sustainable basis*.

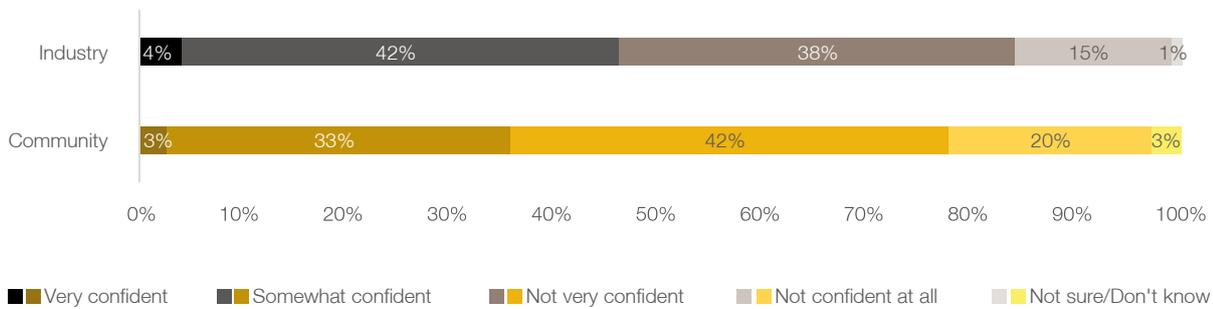
The Australian Water Survey sought to understand the views and confidence level of the water industry and the community about water security issues, and the results will be used to help inform sustainable water policy.

The survey shows that there is very low confidence that Australia has sufficient water security to meet its needs, with only 4% of industry respondents and 3% of community respondents stating they were 'completely confident' in Australia's water security. These results show there is clearly a need for government, industry and community to work together to improve the understanding of water security issues and how to address them.

The level of confidence also differed considerably by population density. Rural respondents from both industry and community had the lowest confidence in water security compared to regional and urban respondents. Seventy-six percent of rural community respondents and 26% of rural industry respondents reported being not very or not at all confident in Australia's water security.

## Water security

How confident are you that Australia currently has sufficient water security to meet all social, environment and economic needs?



Only 4% of respondents were very confident Australia has sufficient water security, with 42% somewhat confident, 38% not very confident and 15% not confident at all.

In contrast to industry, community responses showed only 3% were very confident, one third were somewhat confident (33%), 42% were not very confident with 20% not confident at all.

Opposite page: comments from industry and community respondents on water security.



**“Australia’s water security is a sleeping giant”**

“We respond when there is drought or a disaster... but do not achieve much towards water sustainability for the future outside of such events. [When] we are only immersed in obtaining water security for the here and now there leaves little scope for long term consideration. We look for a ‘band aid’ solution to the current problem and though this may achieve some longevity, it should not encompass the tunnel vision that we know occurs in the moment when looking for a critical resource resolution.”

“Australia’s water security is a sleeping giant – we have been a land of plenty since federation, the impact of decades of drought, under investment in assets, ageing assets, growing water-hungry crops in water scarce areas, plus the low residential water price and peoples’ lack of willingness to pay the true cost of water are putting enormous pressure on our water resources.”

“Australia should be planning and building infrastructure now so that drinking water, food-growing water and water for other uses are well and truly catered for. Water should be graded for use: drinking, industrial, farming, etc. and sourced accordingly (desal, stormwater, reservoirs).”

“Water security is variable and long-term solutions should be planned, applying water sensitive cities thinking and sustainable water management approaches, moving away from large centralised infrastructure to networks providing water from a variety of available (local) sources.”

“[There are] huge challenges for rural and small indigenous communities. Private sector not inclined to invest in these areas and they are not resilient, some unable to provide drinking water to [the] ADWG. [It is] hard to get politicians interested when it doesn’t affect big cities.”

“Population in Sydney and Melbourne is projected to double in the next few decades. There is absolutely no conceivable way that current approaches and infrastructure, when combined with climate change, can deliver the standard of water and sewerage that is required. Innovation is required to an extent never seen in the water sector, as well as vast amounts of new capital and massive refurbishment of existing infrastructure.”

“There is not enough water available or dedicated for environmental flows, particularly in major rural systems such as the Murray and Snowy River catchments. Too much urban stormwater [is] allowed to escape directly into rivers and creeks contributing to significant erosion, sedimentation and pollution issues.”

“Provision of infrastructure and management of the water supply must include maintaining environmental function as a core objective, not just to service us as communities but to provide for the natural environment that relies on the supply and that we in turn rely on for survival and wellbeing.”



# Business outlook and industry issues

The Australian water industry is made up of a range of public and private organisations. From irrigation areas to the inner city, and from policy makers to plumbers, the water industry attracts a broad spectrum of Australians. What lies ahead for the water industry will have flow-on impacts to every part of our economy.

One of the key challenges facing the water industry will be how to effectively address the impacts of climate change; more specifically the projected increase in regularity and severity of extreme weather events that will result in periods of drought and flooding. This challenge is present across Australia although the best solutions and asset management strategies may vary by location.

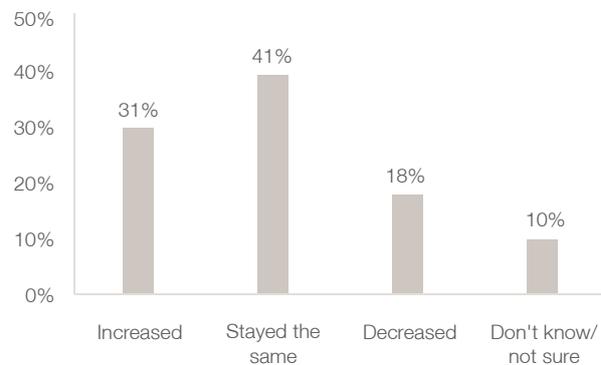
Severe flooding is a challenge in urban, regional and rural areas alike due to the damage and costs that can be caused, and the impacts to people’s livelihoods. Risk reduction and harm minimisation for flooding are ongoing priorities for authorities and will maintain industry attention.

For periods of drought the impacts vary more significantly from State to State and region to region. In an urban context, the short to medium threats of drought have been largely mitigated through the installation of desalination plants. However, the cost of these projects and the emphasis on regulation and value for customer has shifted the focus to reducing costs through operational efficiency. In rural and regional areas water security continues to be a major issue and to address this, capital expenditure is required to secure supply.

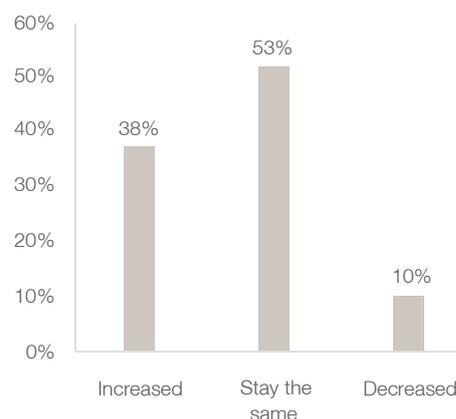
## Business Outlook

The survey sought feedback from industry members on growth opportunities, staffing levels, their outlook for the water sector and any barriers organisations faced in achieving their stated goals. Overall, businesses were slightly optimistic about the outlook in the short and medium term although this was not a view shared by all.

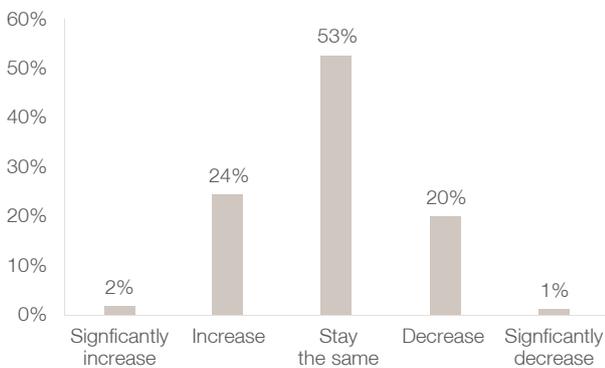
39. Over the last 12 months, have the growth opportunities for your business



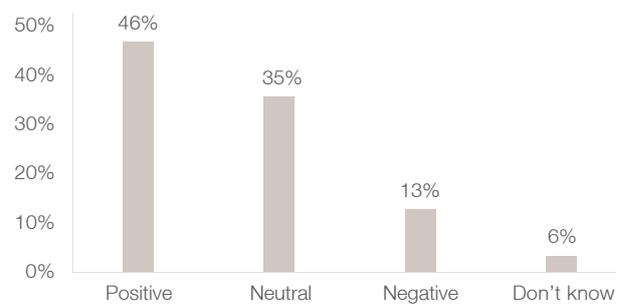
40. Over the next 12 months, do you expect the growth opportunities for your business to:



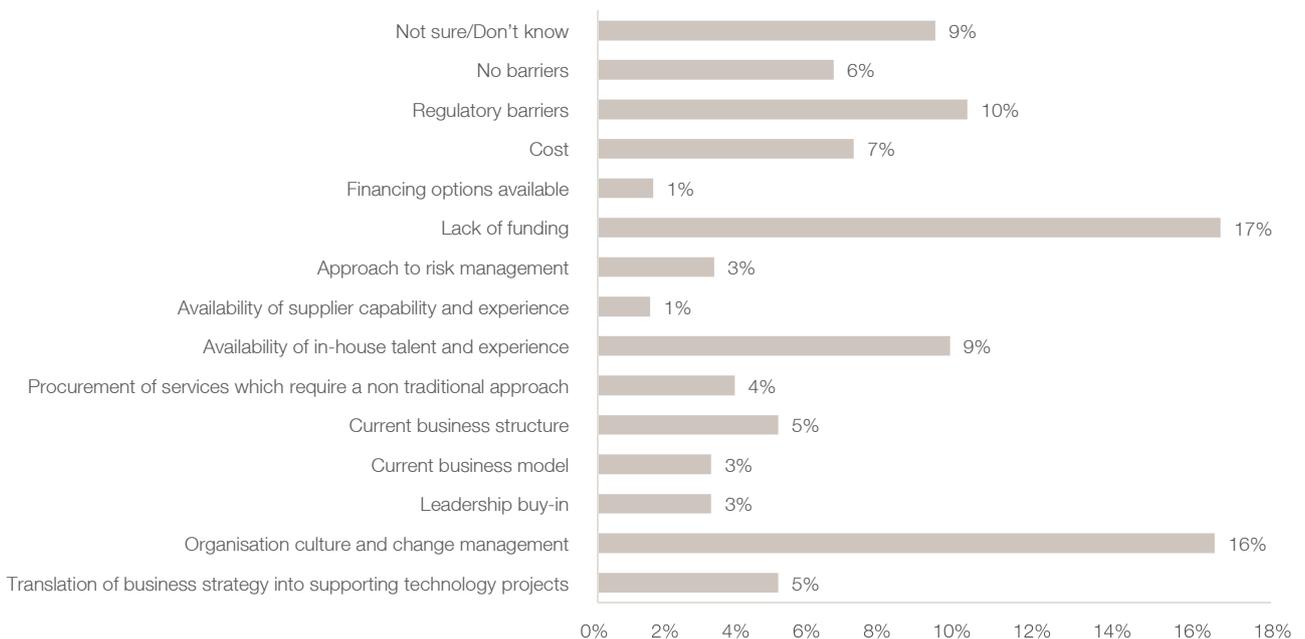
41. Over the next 12 months, do you expect your staffing levels to:



42. Over the next 5 years, do you think the outlook for the water sector will be:



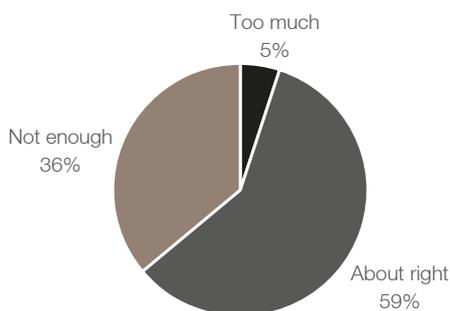
Industry professionals reported a range of barriers to achieving their organisation's stated goals. The most reported barriers were lack of funding and organisational culture and change management, demonstrating the detrimental impacts that uncertainty and change can have on the effectiveness of organisations.



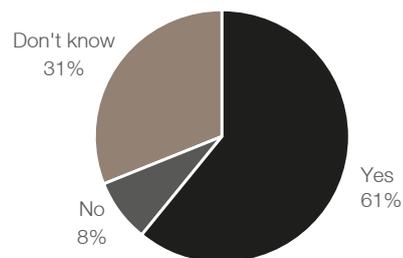
## Unconventional gases

Coal-seam gas is a prominent media issue but less coverage is provided to other subterranean unconventional gases. The survey sought feedback from industry on the regulation, water use and understanding associated with these unconventional gases, and the results show there was a strong interest in these issues among the industry. Sixty-one percent of respondents thought the water triggers should extend beyond coal-seam gas to other unconventional gasses, while 60% thought there wasn't adequate scientific information on the impacts of unconventional gas on water. However, the results also indicated that industry understanding of these issues could be improved with 41% of respondents unsure whether water produced from unconventional gas activities can be treated to a suitable quality for irrigation and other purposes.

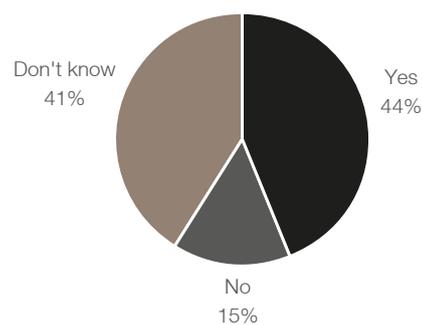
45. Do you think the level of regulation relevant to unconventional gas to manage water in your jurisdiction is:



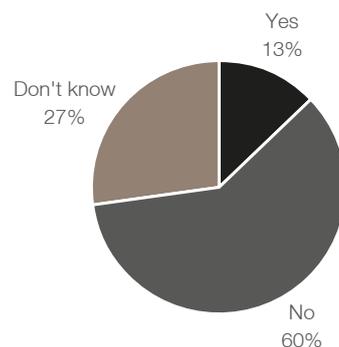
46. Do you believe that in the Environmental Protection and Biodiversity Conservation (EPBC) Act, the 'water triggers' should extend beyond coal seam gas to all unconventional gases?



47. Do you think water produced from unconventional gas activities can be treated to a suitable quality for irrigation and other purposes?



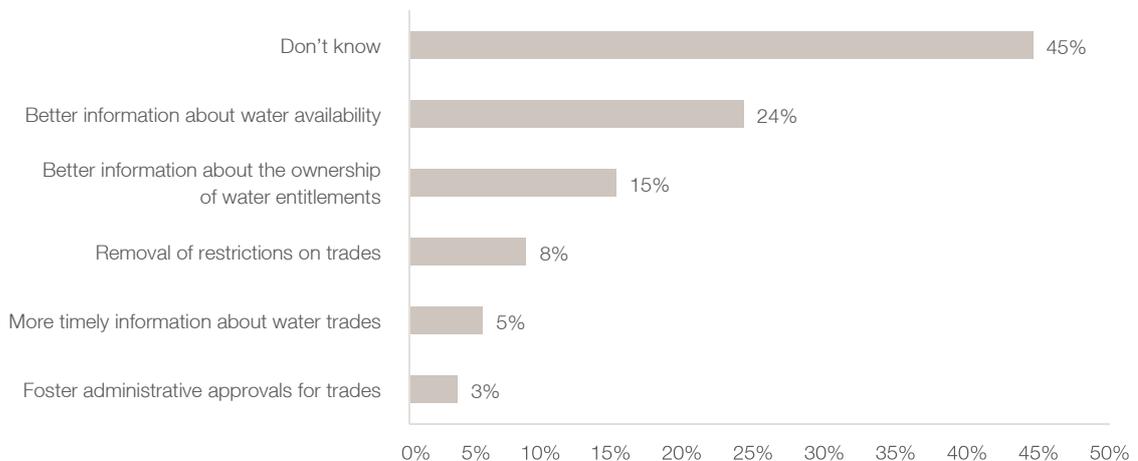
48. Do you believe there is adequate scientific information on the impacts of unconventional gas on water?



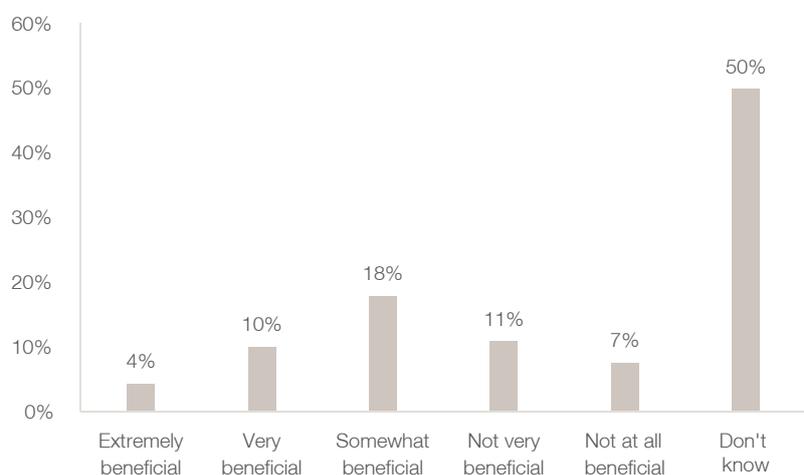
## Market performance

Water markets bring together a variety of stakeholders and interest groups. Financial, economic, environmental, and social drivers all play a part in policy decisions and getting the balance right is a constant challenge. The survey sought industry input on the performance and regulation of water markets. A strong outcome was that industry members do not feel well informed on ways to improve the functioning of markets or whether current bans and limitations are having a beneficial effect.

49. What would most improve the functioning of water markets in your jurisdiction?



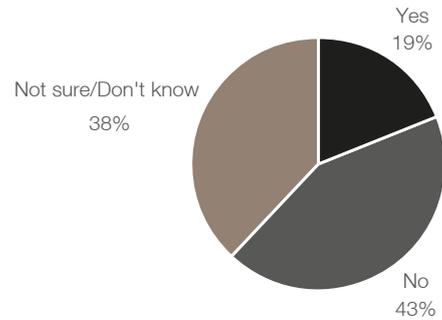
50. Some bans and limitations have reduced the opportunity for urban areas to purchase water entitlements from rural areas. To what extent are these bans and limitations beneficial?



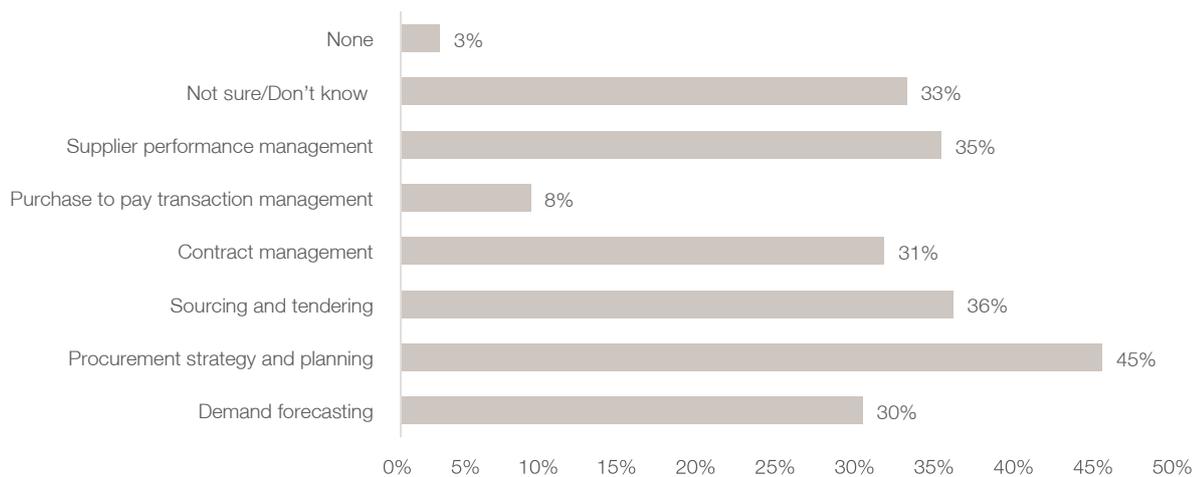
## Procurement

Procurement processes are a consistent issue in the industry and the Australian Water Survey sought feedback from industry on this topic.

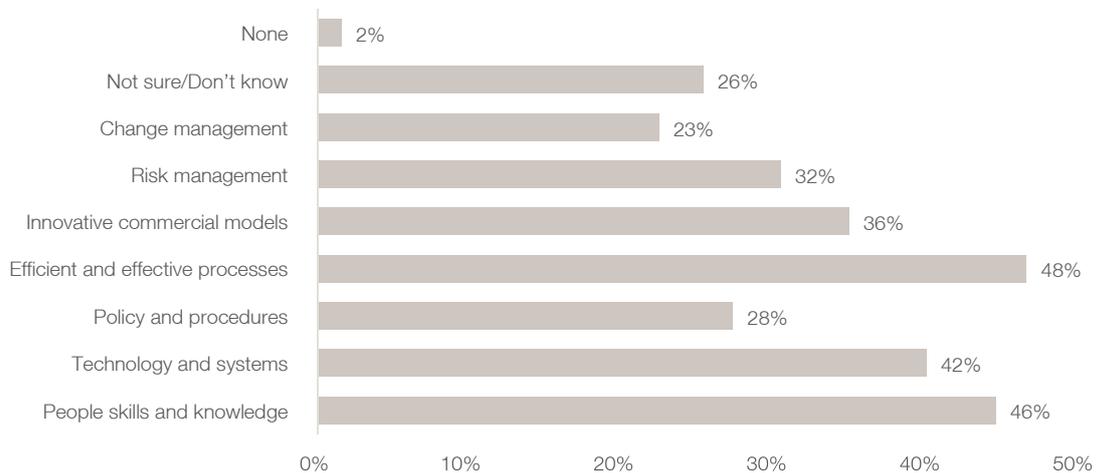
There was some uncertainty about the impact of current procurement processes in the water sector. However 43% of respondents said that the existing procurement processes were not maximising private sector involvement. Procurement strategy and planning was viewed as the main area needing improvements along with more efficient and effective procurement processes.



37. Which areas of procurement/contract optimisation require a capability uplift in your view? (Select all that apply)



38. What do you think the procurement/contract optimisation capability uplift requires specific focus on? (Select all that apply)





## Urban, regional, rural findings

With 24 million people inhabiting a large and dry continent, there are inherent pressures to provide people, businesses and the environment with both drinking water and non-potable water. It is important to understand the differences in attitudes of people living in urban, regional and rural areas to devise appropriate policies and investment plans to ensure sustainable water supplies.

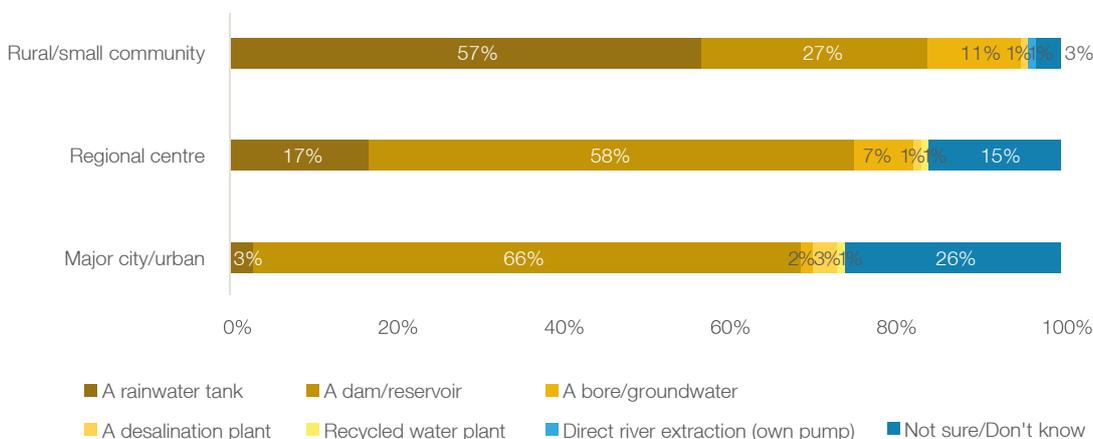
Rural respondents appeared to be more conscious of their water use but were the least willing to pay more to become more water efficient. They were also more concerned about water shortages and had the least confidence in Australia's water security.

The perceived quality of water was much lower in regional and rural areas, and the need for new infrastructure was felt more acutely.

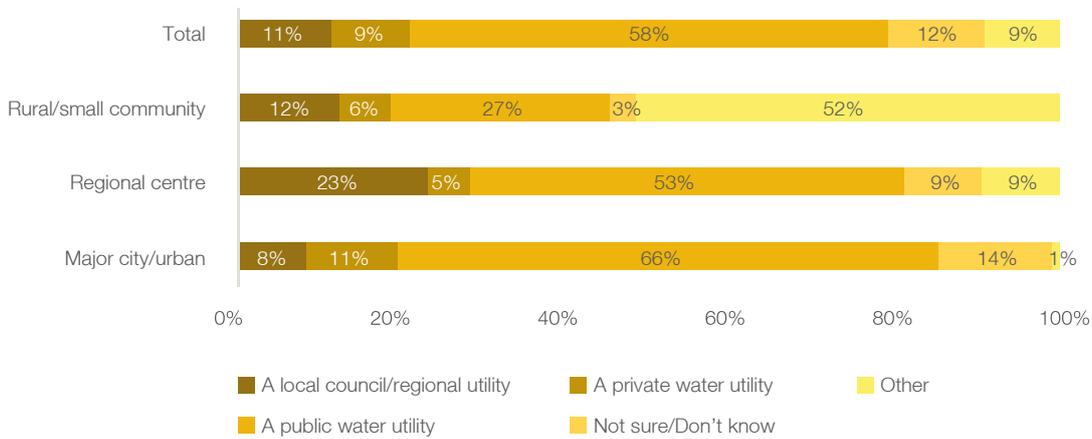
### Community knowledge of water sources and provider

The source of water varied according to area, with rainwater tanks most common in rural communities (57%) while dams and reservoirs were most common in regional and urban areas.

At your usual residence, where does the drinking water that you get out of your tap come from?



Who provides the drinking water to your usual residence?

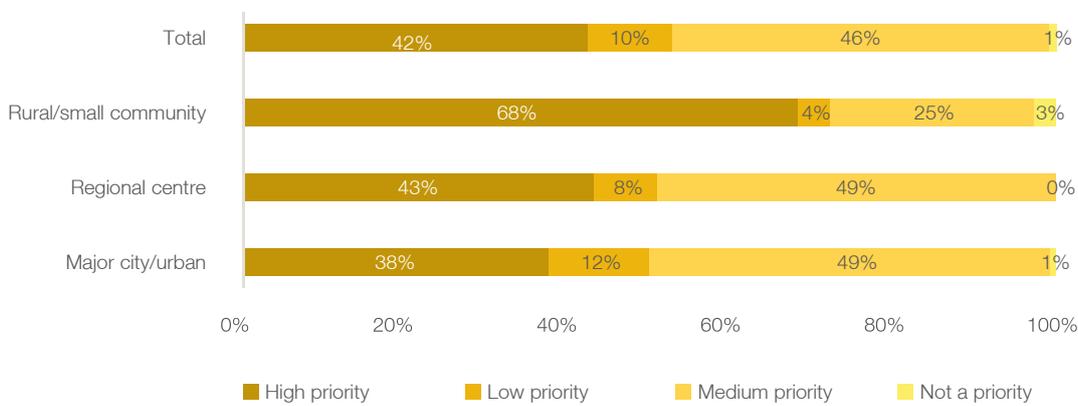


## Water use & efficiency

### Community

Rural community respondents were more proactive and aware about water saving and efficiency measures, and 39% rated their efforts to actively save water as excellent compared to 13% in urban and 18% in regional areas. Rural respondents were also more likely to monitor water usage regularly (47%) compared to 27% urban and 36% regional, and their main motivation for saving water was because “water is scarce”.

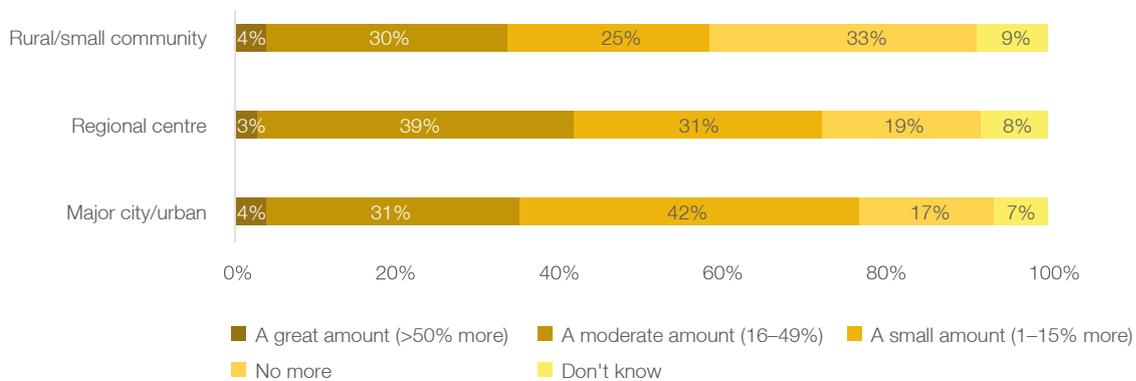
16. What level of priority do you give to saving water and water efficiency?



Most rural respondents considered water saving and efficiency as a high priority (68%) compared to 43% in regional and only 38% in urban areas.

However rural respondents were the least willing to spend more to become more water efficient, and a third (33%) were not willing to spend any more (compared to 19% nationally).

17. How much more would you be willing to spend to become more water efficient?



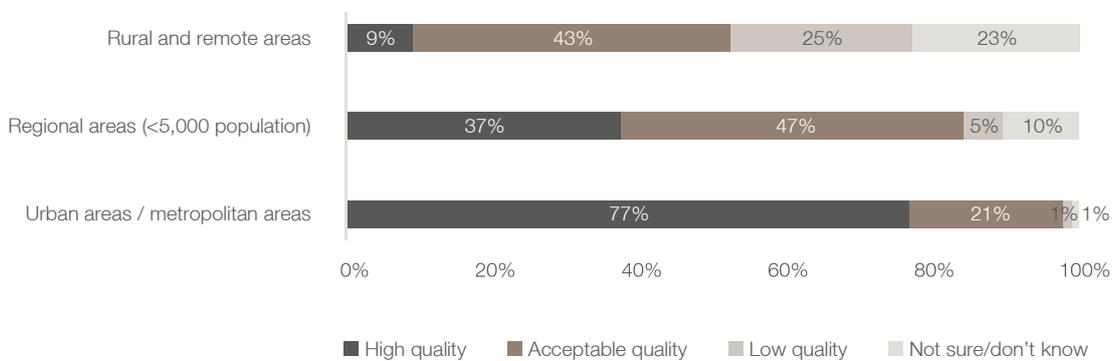
## Water quality

### Industry

Over three quarters (77%) of respondents described water in urban areas as ‘high quality’ with a further 21% acceptable. This changed dramatically in regional and rural areas with quality substantially declining further away from urban areas.

Only 37% of respondents described water in regional areas as ‘high quality’ and in rural areas this dropped to only 9%. A quarter of respondents felt that rural water quality was low and 23% were unsure/didn’t know.

Industry Q12. How do you describe the quality of the drinking water in the following locations in your State/Territory?

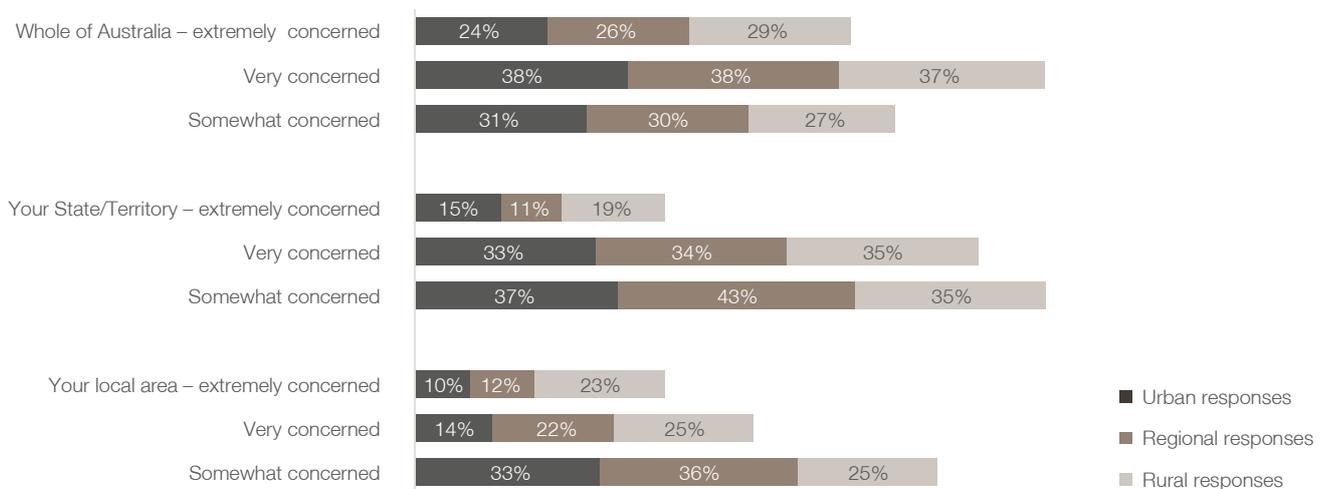


## Water shortages

### Industry

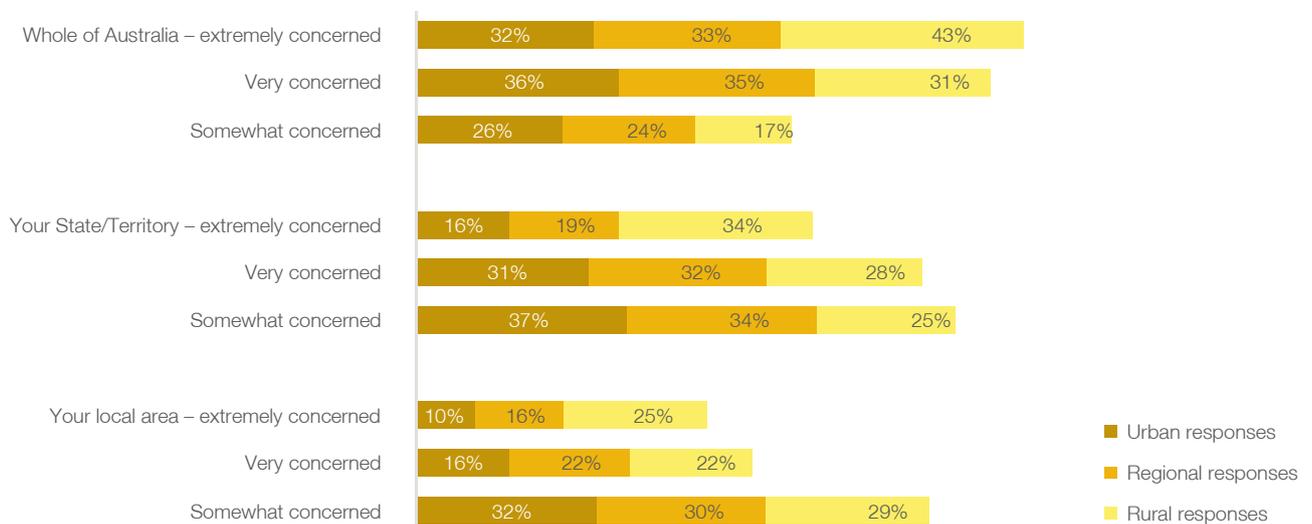
The percentage of rural respondents ‘extremely concerned’ about water shortages in their local area was double the national average (23% compared to 13%) and more were also ‘very concerned’ (25% vs 18% national average). Regional respondents were the most concerned about water shortages when asked to think about the situation in their State or Territory.

Industry Q 27. How concerned are you about water shortages in:



### Community

Twice as many community respondents from rural and regional areas stated there were currently water shortages (34% and 28% respectively) compared to 15% of urban respondents. Similar to industry respondents, more community respondents in rural areas were extremely concerned about water shortages at local, state and national level compared to the other two sub-groups, with the level of concern growing from 25% at a local level, to 34% at a State/Territory level and 43% for the whole of Australia.





# Appendix

## Methodology

**“Focus needs to look at a balance of rural and urban areas, and their respective demands into the future.”**

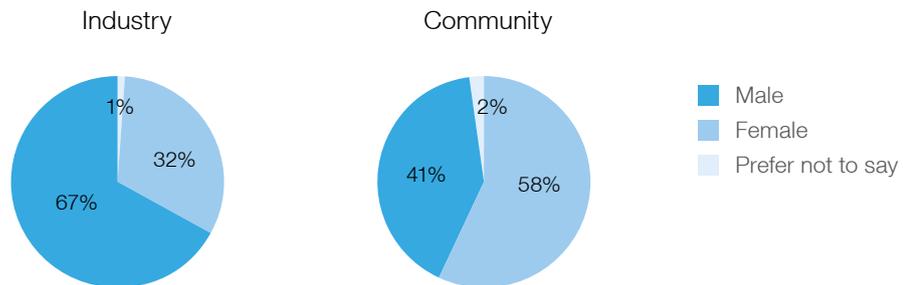
– Industry comment

# Methodology

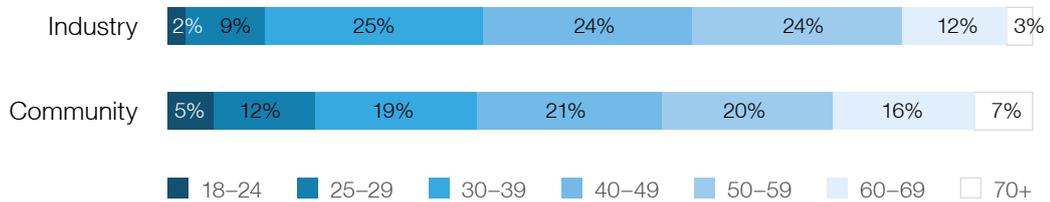
The Australian Water Survey was conducted using the online survey platform QuestionPro between the dates of 18 July and 19 August 2016 with the assistance of KPMG. The survey received 2,318 completed responses from around the country. The respondents were split into two streams based upon whether they were members of the water industry or the general community. Both streams were asked a set of common questions and additional stream specific questions. Forty-five percent of respondents were from the community and 55% were from industry. The full list of questions can be found on the Association website [www.awa.asn.au](http://www.awa.asn.au).

Response distribution rates are demonstrated in the graphs below.

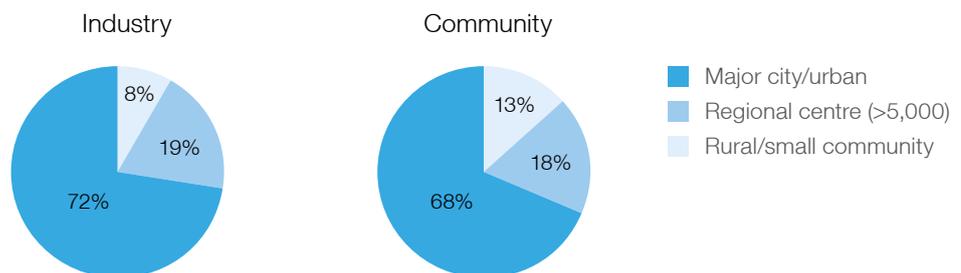
## Gender



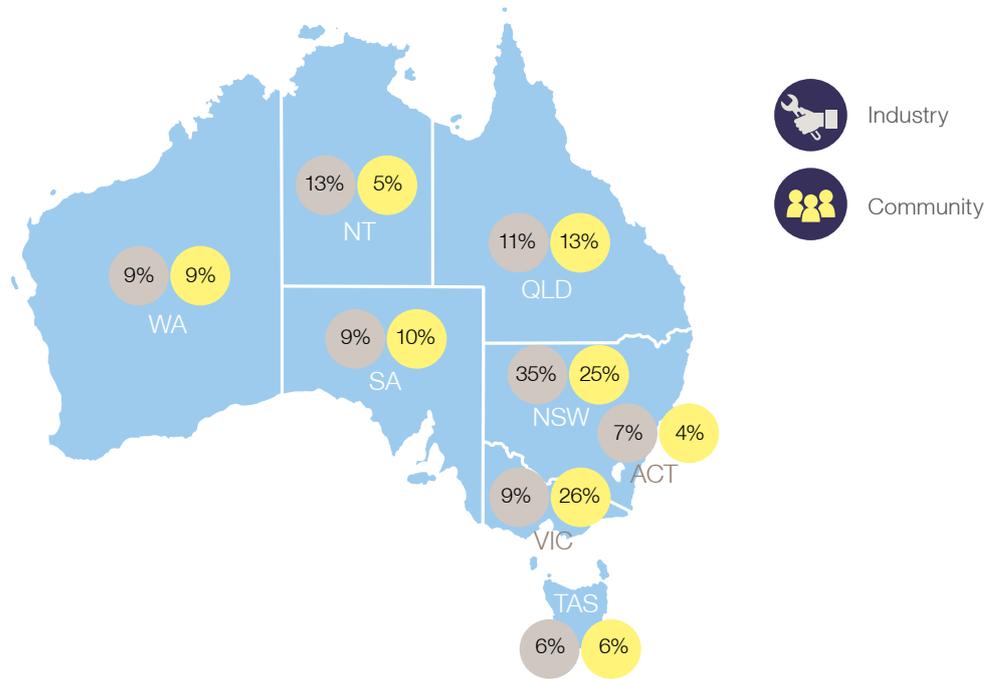
## Age



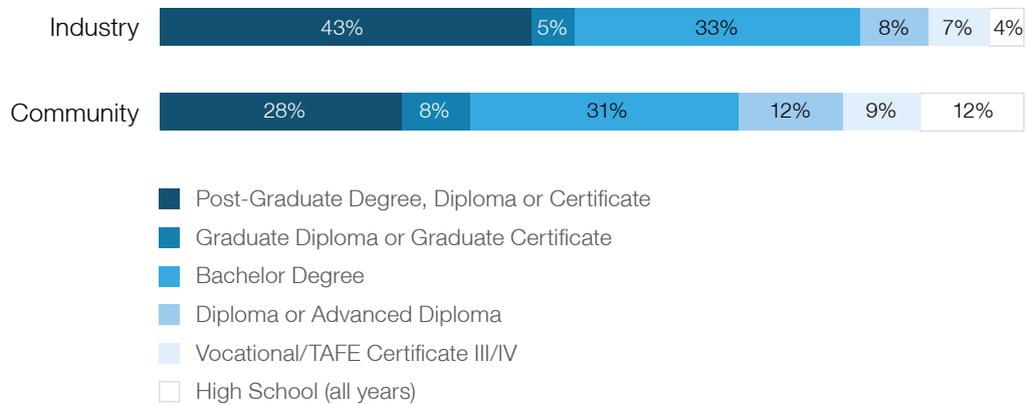
## Geography



Location



Education and qualification





# Appendix

About the authors

**“Innovation is  
required to an  
extent never  
seen in the  
water sector”**

– Community comment

# AUSTRALIAN<sup>™</sup> WATER

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ASSOCIATION

## About Australian Water Association

The Australian Water Association is the national peak water organisation. Our value proposition is to drive Australia's prosperity with water information, expertise and collaboration for sustainable water management.

Membership is broadly based and multi-disciplinary, covering the entire water cycle. Membership includes more than 100 utilities, 600 corporate members, and 4,500 individual water practitioners. The Australian Water Association provides the platform for our water experts, practitioners and businesses to share information, grow expertise and collaborate effectively. Our membership includes professionals and practitioners working in utilities, science and research, energy and resources, manufacturing and agriculture.

We operate across all Australian States and Territories through an active branch network and 19 Specialist Networks across the water cycle. We also maintain extensive international links with similar peak water organisations overseas.

The Australian Water Association delivers relevant water information and advocacy, a comprehensive program of conferences, workshops, publications, industry development programs, training courses, networking and B2B opportunities for all those connected with the management of water.

[www.awa.asn.au](http://www.awa.asn.au)



**Fiona McCredie**

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Fiona is a contractor at the Australian Water Association. She has over fifteen years' experience in policy, investor relations and strategic planning.

Fiona has a Masters of Business Administration (MBA) from the Australian Graduate School of Management and a Bachelor of Science (in Agriculture) from the University of Sydney.



**Ashleigh James**

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Ashleigh is the Senior Policy Analyst at the Australian Water Association. Ashleigh has more than eight years' experience working in external relations, media and communications. She has worked in both the private and public sectors in Australia, the United Kingdom and the United Arab Emirates. She has bachelor degrees in Journalism and Arts from the University of Queensland.



**Siobhán Jennings**

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Siobhán Jennings is the WA State Manager at the Australian Water Association where she manages the operations of the WA Branch and facilitates the National Young Water Professionals and Water, Sanitation and Hygiene Specialist Networks. Siobhán has more than eight years' experience working in the water sector as an engineer and project manager, and currently chairs the Environment Committee for the United Nations Association of Australia (UNAA). She has a Master of Business Administration (MBA) from the Australian Institute of Business and a double degree in Environmental Engineering and Arts from Murdoch University.

# ARUP

## About Arup

Arup is the creative force at the heart of many of the world's most prominent projects in the built environment and across industry. We offer a broad range of professional services that combine to make a real difference to our clients and the communities in which we work. We are truly global. From 92 offices in 40 countries our 12,000 planners, designers, engineers and consultants deliver innovative projects across the world with creativity and passion.

Founded in 1946 with an enduring set of values, our unique trust ownership fosters a distinctive culture and an intellectual independence that encourages collaborative working. This is reflected in everything we do, allowing us to develop meaningful ideas, help shape agendas and deliver results that frequently surpass the expectations of our clients.

The people at Arup are driven to find a better way and to deliver better solutions for our clients.

We shape a better world.

[www.arup.com](http://www.arup.com)



**Daniel Lambert**

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Daniel is Arup's Australasia Water and Urban Renewal Business Leader. He is passionate about developing and implementing smart and innovative solutions in the water sector.

Daniel has successfully delivered projects in Australia, New Zealand, Asia, South America and Africa. He is a Fellow of Engineers Australia and a member of the National Urban Water Reform Steering Committee.

Daniel is a leader in the water industry with awards including the International Water Centre Water Leader Scholarship, the Consult Australia Future Leader's Award, the Association of Consulting Engineers Singapore Professional Engineers Award and the Engineers Australia Presidents Award for Excellence. He was recently recognised by Engineers Australia as one of Australia's Most Innovative Engineers.



**Mark Bryan**

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Mark is a Civil Engineer at Arup with a background in infrastructure design and economics.

Mark takes pride in solving problems; whether they are infrastructure issues that affect communities or determining the most efficient allocation of resources. He has worked on a variety of major infrastructure projects around the country from stormwater harvesting to highways and is committed to seeing projects through from concept to construction.

Mark holds bachelor degrees in Civil Engineering and Commerce from the University of New South Wales.



**Michael Salt**

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Michael is a Consultant with Arup and has six years' professional experience in international organisations. He provides specialist economic and sustainability advice for a range of public and private clients. Michael focuses on environmental issues and the renewable energy sector, where he contributes economic and policy analysis and advice. He employs strong research and communication skills to successfully deliver projects and support major clients. Prior to joining Arup, Michael has held professional positions with the United Nations Climate Change Secretariat and Ericsson Australia.

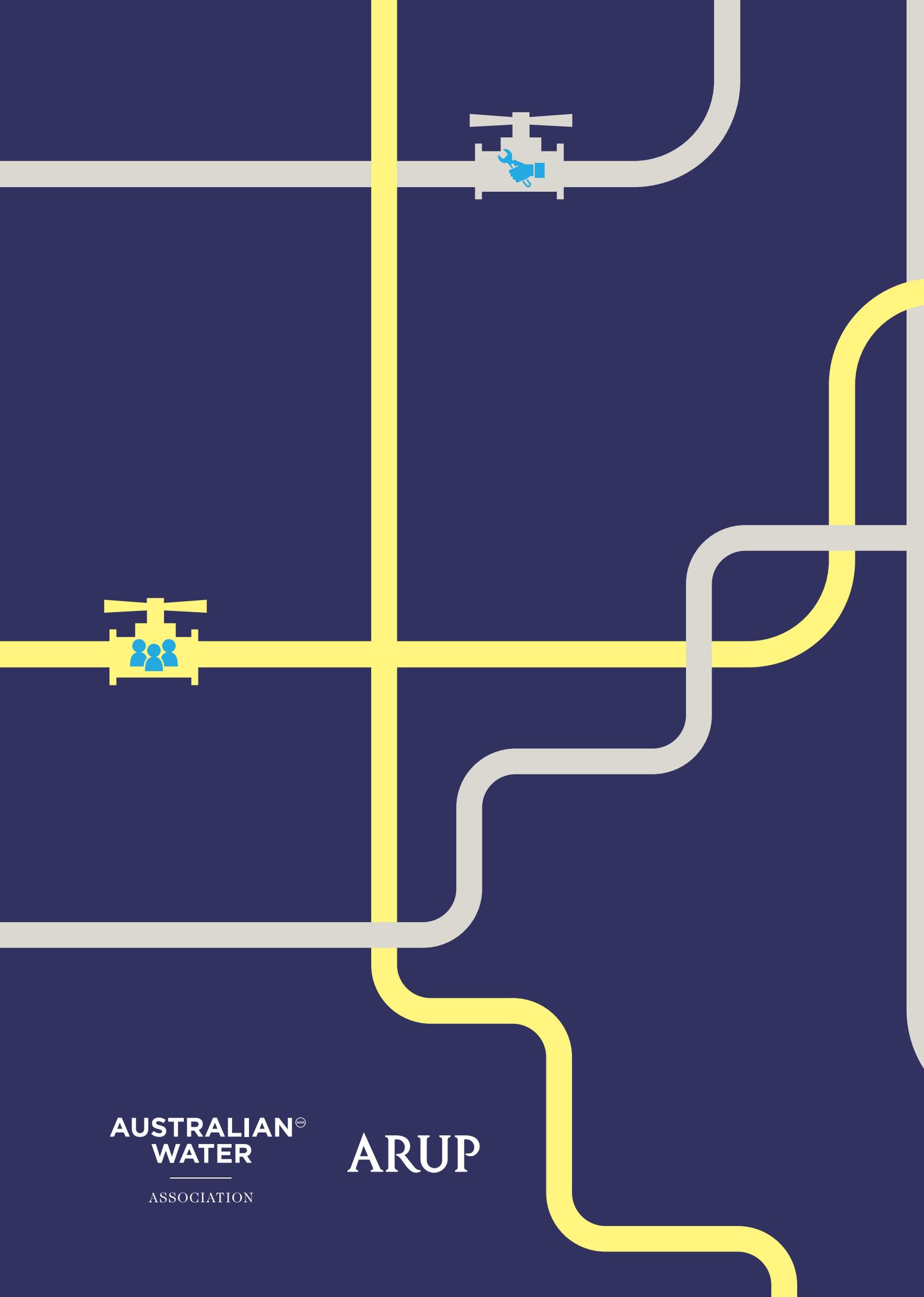


36pp 'Soothing water' © Isaac Tong, Arup  
56pp 'Reflections' © Christopher Anoso, Arup

These photos were taken as part of Arup Uncovered, an exhibition which encouraged Arup staff to explore their connection with the world around us.

**Reports detailing industry and community responses have been prepared for each State and Territory and can be found on the Association website along with the full list of Survey questions.**

**[www.awa.asn.au](http://www.awa.asn.au)**



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