

# Industry Perspectives on the Introduction of Purified Recycled Water into South East Queensland: A Report of Scoping Interviews

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The Urban Water Security Research Alliance (UWSRA) is a \$50 million partnership over five years between the Queensland Government, CSIRO's Water for a Healthy Country Flagship, Griffith University and The University of Queensland. The Alliance has been formed to address South-East Queensland's emerging urban water issues with a focus on water security and recycling. The program will bring new research capacity to South-East Queensland tailored to tackling existing and anticipated future issues to inform the implementation of the Water Strategy.

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## FOREWORD

Water is fundamental to our quality of life, to economic growth and to the environment. With its booming economy and growing population, Australia's South-East Queensland (SEQ) region faces increasing pressure on its water resources. These pressures are compounded by the impact of climate variability and accelerating climate change.

The Urban Water Security Research Alliance, through targeted, multidisciplinary research initiatives, has been formed to address the region's emerging urban water issues.

As the largest regionally focused urban water research program in Australia, the Alliance is focused on water security and recycling, but will align research where appropriate with other water research programs such as those of other SEQ water agencies, CSIRO's Water for a Healthy Country National Research Flagship, Water Quality Research Australia, eWater CRC and the Water Services Association of Australia (WSAA).

The Alliance is a partnership between the Queensland Government, CSIRO's Water for a Healthy Country National Research Flagship, The University of Queensland and Griffith University. It brings new research capacity to SEQ, tailored to tackling existing and anticipated future risks, assumptions and uncertainties facing water supply strategy. It is a \$50 million partnership over five years.

Alliance research is examining fundamental issues necessary to deliver the region's water needs, including:

- ensuring the reliability and safety of recycled water systems.
- advising on infrastructure and technology for the recycling of wastewater and stormwater.
- building scientific knowledge into the management of health and safety risks in the water supply system.
- increasing community confidence in the future of water supply.

This report is part of a series summarising the output from the Urban Water Security Research Alliance. All reports and additional information about the Alliance can be found at <http://www.urbanwateralliance.org.au/>.



**Chris Davis**

Chair, Urban Water Security Research Alliance

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## EXECUTIVE SUMMARY

The research in this report forms part of the *Systematic Social Analysis Project* of the Urban Water Security Alliance (the Alliance). This part of the project aimed to investigate industry perspectives of purified recycled water (PRW). To date, research by the Alliance has focussed on community and technical perspectives. The findings of this study provide an insight into industry perspectives and thereby contributes to a more complete and comprehensive picture of how the various members of the SEQ community are thinking about, and responding to, PRW.

Results from interviews with 15 industry representatives suggested that the general view of PRW for industry was consistent with findings from our previous research. More specifically, industry representatives generally expressed confidence in the PRW scheme. Although it was acknowledged that there was potential for negative impacts to industry from community resistance or negative marketing, most representatives seemed to have confidence that these negative impacts could be managed.

Results also indicated that some respondents would like to receive more information about the introduction of PRW. Respondents indicated a preference for electronic information and face-to-face workshops as a means to communicate information about PRW. This finding may be particularly useful in the development of future communication strategies around PRW.

# 1. INTRODUCTION

This report forms part of the Systematic Social Analysis project within the Urban Water Security Alliance (the Alliance). The Alliance is a research partnership in South East Queensland (SEQ) between Queensland Government, CSIRO, the University of Queensland and Griffith University.

A key area of the science in the Alliance is the Systematic Social Analysis Project, which aims to:

*Develop a partnership between government, scientists, and the community that builds mutual trust, acknowledges a 'whole of community' challenge and responsibility, and provides a basis for ongoing sustainable management and use of water resources in SEQ.*

To date, research conducted within the project has focussed on community members' perceptions of Purified Recycled Water (PRW). This has encompassed a baseline telephone survey to identify the key drivers of people's intended behaviour in relation to purified recycled water (Nancarrow, Leviston, Tucker, Greenhill, Price, Dzidic, 2007). In 2008, scoping workshops were conducted in SEQ to explore in greater depth the key drivers of behaviour, that is, fairness, trust, emotion and risk (Alexander, Price, Browne, Leviston, Bishop and Nancarrow, 2008). In addition, workshops were held using Q-methodology to explore the differences and similarities between technical and community members in relation to their attitudes and perceptions of risk around PRW (Browne, Leviston, Green and Nancarrow, 2008). Thus, the focus in the project up to this point has been on identifying community members' perceptions and perspectives with some investigation of how technical people structure risk associated with PRW and how they view the community's perspective.

The aim of this phase of the project is to broaden our understanding of SEQ industry responses to PRW. Insight into industry perspectives will provide a more complete and comprehensive picture of how the various members of the SEQ community are thinking about, and responding to, PRW. The research identifies key areas for further research and provides important information to Queensland government agencies about current knowledge and attitudes of industry toward PRW, thus informing future communication strategies.

## 2. METHODOLOGY

### 2.1. Recruitment and Sample

Semi-structured interviews were conducted with representatives from industries and peak bodies located in South East Queensland (SEQ). Efforts were made to speak to representatives from the industries of: food manufacturing, tourism, pharmaceuticals, health food and vitamin manufacture, alcoholic and non-alcoholic beverage manufacture. These industries were identified by the Queensland Water Commission (QWC) as being those of interest for this phase of the research. A researcher contacted peak bodies and companies by phone and email and invited them to take part in the research. The purpose and scope of the project was communicated to potential participants, and confidentiality and anonymity was assured. It was also made clear to potential participants that no prior knowledge was needed in order to take part in the interviews.

Fifteen industry representatives participated in a total of 11 interviews. Participants represented businesses involved in the production of food, alcoholic and non-alcoholic beverages, and pharmaceuticals and from peak bodies representing tourism and food and grocery interests. Company representatives were from medium to large multi-national businesses that are important industries in the SEQ region. The roles of the representatives who took part in the interviews were: chief executive, policy officer, director of sustainable development, technical manager, manufacturing manager, maintenance manager, operations manager, senior project manager, state environmental coordinator, business development and innovations manager, and marketing manager. In some cases two representatives from one organisation were interviewed at the same time, however, they are treated as one interview as in all cases the responses did not notably differ between the two representatives.

## **2.2. Procedure**

Interviews were conducted either onsite at the place of business or via telephone. Two researchers attended each interview, one as the interviewer and one to take notes of responses. An interview schedule guided each interview and in general the duration of most interviews was 30 minutes.

At the beginning of each interview the representatives were given a brief introduction to the Urban Water Security Research Alliance and the research being conducted within the Systematic Social Analysis project. All representatives were assured of the confidentiality of their responses; they were advised that their name, and the name of their company, would not be linked to any information they provided in the interviews. At the completion of each interview, representatives were asked whether they would like to be emailed a link to the Alliance's website and they were also made aware of the existing systematic social analysis research report on the website, as well as upcoming reports. In all cases, representatives expressed interest and they were emailed this information.

## **3. RESULTS**

The purpose of the interviews was to gain an understanding of industry perspectives on the introduction of purified recycled water (PRW). To explore this issue, questions were asked about a number of topics in relation to the introduction of PRW. These included: current knowledge, knowledge sources, potential impacts to industry, personal attitudes, and procedural and distributive justice perceptions. In general, there was a high degree of consistency in the responses of the representatives. The results reported below highlight the key themes and prevailing views of representatives. Where differences in views arose, these are noted. Results are structured around the questions asked in the interview schedule; however, emergent themes are also discussed.

### **3.1. Knowledge and Information**

In four of the 11 interviews, representatives reported receiving contact or information about the introduction of PRW from a Queensland government agency. Those representatives who seemed to know most about the issue had received information from industry-related groups (e.g., Australian Industries Group). In approximately half of the interviews, representatives reported that they had received information from industry group meetings or attended industry-hosted presentations by guest speakers about the introduction of PRW and the technical aspects of the treatment processes.

In four of the 11 interviews, representatives reported receiving no information from government or other sources, although in two of the interviews there was awareness of the introduction of PRW because the companies had been contacted by a research consultant to elicit views about the issue. Two of organisations that had not received information were situated outside SEQ. One representative reported that the production manager of their company was unaware of the introduction of PRW in SEQ. Initial recruitment attempts also reinforced this finding with two businesses expressing no awareness of the introduction of PRW in SEQ.

Representatives from the peak bodies and those who had not received any information expressed a desire for more information about PRW. Other representatives, many with an engineering or science background, felt that they had enough information. One of the peak body representatives suggested that there was a need for technical and scientific information about the implications of PRW for food and also for a public awareness campaign so that everyone has an adequate understanding of how PRW will be different from the current supply. Another peak body representative suggested the need for external organisations to monitor and report on water quality. Two other representatives also highlighted the need for greater media coverage of the changes.

When asked how information could best be delivered to industry, the majority of representatives suggested the use of existing channels of communication such as industry group meetings or existing relationships with relevant Queensland government agencies. A face-to-face workshop or seminar was suggested as the best format for information delivery. As some representatives stated, a seminar or workshop allows people to ask questions and to hear the questions and views of other industry representatives. There was acknowledgement that having a lack of time reduced the likelihood of reading reports or written information, although one representative suggested that a brochure would be helpful. In four of the interviews, representatives mentioned the use of websites for information

gathering and two of these mentioned looking at the QWC website. Representatives from organisations with head offices located outside of SEQ suggested that information should come in electronic format so that it could be forwarded on to others.

### 3.2. Potential Impacts of PRW on Industries

When asked whether their organisation, or others in their industry, had concerns about the introduction of PRW, the majority of representatives (in six of the 11 interviews) expressed no concerns on the part of their organisation or others in their industry. In the case of one organisation, they had no awareness of the introduction of PRW into SEQ and therefore had not given any thought to possible impacts.

In four interviews, concerns were expressed and these were exclusively related to the food industry. Of the representatives who expressed concerns, one downplayed the concern by pointing out that the introduction of PRW would affect everyone in SEQ, both industries and consumers and this sentiment was echoed by other representatives. This perspective applied to those organisations that produced and distributed products locally in SEQ. These representatives did not represent organisations whose distribution extended to other parts of Australia or internationally. One representative of a peak industry group identified the potential for residual chemicals to remain after the treatment process.

The concerns raised in two of the other interviews were about public perceptions of the safety of the goods produced using PRW. These representatives also voiced concerns about competitors outside SEQ developing marketing campaigns based on their products not containing recycled water. As one representative stated *“If it’s down to consumer perspective it’ll be ok. It will only be a problem if a competitor wants to make a big deal out of it”*. With this possibility in mind, one representative reported that discussions were taking place within the company about how this eventuality would be dealt with. The possibility of ‘scare’ campaigns was raised in two other interviews. As one representative argued, food safety is the important concern along with product characteristics - quality, flavour, taste, price, perceptions. The representative argued that consumers prioritise different characteristics and thus, marketing or scare campaigns could influence some consumers.

Some representatives suggested ways that negative campaigns could be opposed. One representative was confident that there was enough information to challenge a negative marketing campaign—they suggested that the approach needed was more information from QWC about control methods and harder ‘selling’ of the seven barrier process. Another said that they would come up with a credibility campaign. One representative was unsure whether products would need to be labelled as containing recycled water.

There was explicit or implicit acknowledgement from other representatives that public perceptions may be important. Representatives noted that *“responses are perceptual”* and *“it’s purely a perception.”* Interestingly, some representatives highlighted the onsite treatment and testing processes that they have in place to ensure water quality. *“We can manage the expectations of consumers”* one representative stated.

One representative mentioned that allergens may be a problem, however, this statement was qualified by discussion of how the seven barrier system would remove the allergens and any risk associated with them was negligible. One representative mentioned that there was no problem as long as the water was put back into the dam before being piped to consumers. These comments seem to reflect an understanding and confidence in the treatment processes.

With regard to tourism, the main issue was security of water supply and water safety. It was noted that visitors do not generally cook and often drink bottled beverages so they are unlikely to be worried by safety issues (unless of course there was an acute problem). For tourism operators, the main issue is having enough water rather than where the water comes from. Water security and its impact on business viability is something mentioned by other representatives as well. It is worth noting that peak body representatives had not been contacted by their members with any concerns about the introduction of PRW, although the representatives speculated that awareness among members may be low.

When asked whether there were other industries that could be impacted by the introduction of PRW, representatives mentioned the food and beverage industry. One representative said that people in the food industry are quite comfortable with PRW and another representative had not heard any concerns

from other industries. The representative who expressed most concern about the negative impact of PRW also thought that any food industry would be concerned about the potential for a negative campaign citing the 'Poowoomba' campaign as an example.

### 3.3. Procedural Justice Concerns

All representatives agreed with the introduction of PRW without a referendum. Some thought that a referendum would have been “*stupid*”, “*ridiculous*” a “*waste of money*” and others thought that the government’s decision not to go ahead with a referendum was “*fantastic*” and a “*good decision*”. The outcome in Toowoomba was mentioned by two representatives as a precautionary tale. It was acknowledged by most representatives that the introduction of PRW is a necessity given the crisis situation in SEQ and that government needed to make a decision and take control.

The sentiment of the majority of representatives, however, was that there should have been more forward planning. These representatives suggested that all of the options should have been examined and decisions made before reaching a crisis point. Although all representatives agreed that the government had made the right decision not to proceed with the referendum, nevertheless one representative advocated for a referendum and consultation as the ideal process. Another representative noted that the government’s approach to the introduction of PRW had been “*heavy-handed*”. The same representative pointed out that Singapore had undertaken two years of intensive education so that at the time of introducing PRW, there were high levels of acceptance in the community. Thus, the representative argued that there needed to be a good public education program in SEQ so that the community can understand the processes associated with water treatment. Similarly, another representative noted that the government should have had more communication with the community so that they knew what was going on.

### 3.4. Distributive Justice Concerns

Representatives were asked whether they thought there were any people, groups or industries that would be disadvantaged or advantaged by the introduction of PRW. In two of the interviews, representatives said that the community would benefit due to increased water security: “*Collectively we all benefit, rather than the dams running out of water. Only those who are really against it would be disadvantaged*”. Another representative said that businesses that use a lot of water would be advantaged. The same representative went on to say that PRW gives businesses like theirs the ability to continue to operate at the current level of production, without having to downscale because of water shortages. “*People work here who have families and people would lose their jobs*”.

People working in the recycled water industry as well as companies who produce bottled water were also cited as being advantaged by the introduction of PRW. One representative also said that the power stations would be more efficient with the use of PRW in cooling towers.

In terms of those who would be disadvantaged by the introduction of PRW, two representatives said that no-one would be disadvantaged, and two said those who were against PRW would be disadvantaged. One representative was unsure whether marine life might be negatively impacted and one representative said that companies that were affected by negative marketing could be disadvantaged. It should be noted that this representative thought that there was only a small potential for this to happen and that there was enough scientific knowledge to allay consumer concerns.

There was a sense of inevitability about water price increases - “*water prices will only go one way*” - and an acknowledgement of the impact of the increases on industry. One representative pointed out that their company had not included water as a production cost in the past but it was now being included (although not yet passed on to consumers). Another representative stated that they would be concerned if water costs were more than NSW, as that would make them less competitive. Interestingly, some representatives pointed out that water, as a valuable resource, needed to be priced appropriately. Another representative pointed out that the benefit of increased water prices was that it would provide good economic justification for environmental projects (within the organisation) and therefore increase the likelihood of approval of the projects.

### 3.5. Waste Water

Representatives from one organisation mentioned that waste water was more of a concern for them than the water that comes onto the site. The representatives noted that in the past 12 months their council had been undertaking closer monitoring of their waste water and was more stringent about compliance with waste water regulations. Another representative echoed this view, stating that regulation of waste water was improving. This representative also highlighted inequalities in waste water charges between industry and commercial enterprises (e.g., hotels). Some representatives also mentioned that their council had requested a chemical manifest for their factory to inform councils of the chemicals that may end up in waste water.

### 3.6. Personal Views

Representatives were asked about their own personal attitude to the introduction of PRW. Almost all representatives located in SEQ said they would have no problem drinking it. A few of the representatives expressed mild reservations: *“I’d rather dip a cup in a mountain stream, but it’s not an issue”*, *“I’d be reluctant to drink PRW straight.”* One representative raised a concern about the long-term effects of residual chemicals in PRW. Two representatives mentioned that they or others had concerns about children’s exposure to PRW. In some cases representatives were extremely supportive of the scheme: *“[I’m] looking forward to it....we can’t maintain our city without a water supply”*, *“Why haven’t they done it before now? 17 million Litres of effluent goes into Moreton Bay so recycled water would be good for the environment.”*, *“I think it’s wonderful”*.

To explore the issue further, representatives were asked a hypothetical question. This question asked the respondents to choose between buying mountain spring water and bottled PRW. The majority said that their choice would be driven by price. Four representatives expressed a preference for spring water but most qualified their preference by saying that it was dependent on the price differential. One representative said price wasn’t an important factor in the decision.

Underpinning representatives’ personal attitudes were two additional themes. One theme centred on relative water quality. That is, respondents made the argument that the current water supply is not perfect and therefore PRW will not be any worse, and may even be better. Some representatives also expressed high levels of confidence in the treatment process with one representative stating that *“I’m an engineer by training. I have trust in the process”*. In addition, some representatives pointed out that they had drunk PRW in other countries and that there was no problem with it there, so they had confidence in the SEQ scheme.

### 3.7. Other Emergent Themes

There were a number of additional themes that arose unprompted during the interviews. The majority of respondents made some mention of contaminants in the existing water supply with mention of dead cows, carcasses and fertilizers leaching into the dam water. This theme is exemplified by comments such as: *“All water is contaminated by something”* and *“Has anyone looked at the dam lately?”* One representative explicitly argued that there should be discussion of comparative water quality allowing people to be informed about the current contaminants in dam water. The implication of this theme was that PRW will not pose any greater risk than already exists with the current water supply.

Another theme running through the interviews was a concern with the security of water supply. The majority of representatives made some comment about water security being a major issue, with some representatives saying that it was the major concern for their business.

Not surprisingly, the community, community perceptions and public opinion were mentioned by the majority of representatives as an issue relevant to PRW. Some representatives stated that there needed to be greater communication with the community about PRW. One of these representatives noted that there had not been much press and wondered whether that had been intentional. This person went on to say that people need to be updated on PRW.

Other representatives stated that community perceptions (of PRW) needed to be managed. Two representatives stated that PRW will be quickly forgotten by the community and the media, and any concerns will therefore disappear. One representative said that although their company had received three customer enquiries about fluoride in the water, they had received none about PRW.

There was also recognition from some representatives that everyone in the SEQ community - industry and consumers - would be using water from the PRW scheme. These types of comments seemed to indicate that any potential impacts of PRW would be ameliorated by the shared exposure to the risks. That is, people in SEQ would not be worried because everyone will be using the water.

#### **4. SUMMARY AND CONCLUSIONS**

It was clear from the interviews that although some representatives had received information about PRW and had a good level of knowledge, a proportion had received little or no information. Initial recruitment attempts also reinforced this finding with two organisations expressing no awareness about the introduction of PRW in SEQ. Representatives with the highest level of knowledge were those who had attended presentations and workshops by industry groups and/or had a direct relationship with a government agency such as a local council or the QWC. A number of representatives mentioned information forums run by the Australian Industries Group. Those representatives who had low knowledge expressed a desire for more information and generally, representatives suggested using existing communication channels and workshops or seminars as the best format for delivery of the information. Accessing information via a website and receiving a brochure or electronic information was also viewed positively by some.

The level of concern regarding the introduction of PRW of most representatives was found to be low. There was, however, recognition by most representatives of the possibility of negative community perceptions of PRW or competitors' negative marketing campaigns impacting on their businesses. Part of the lack of concern may be an outcome of the type of representatives interviewed. Most representatives were in technical roles and they often had science or engineering backgrounds. This meant that many expressed a high level of trust in, and understanding of, the water recycling processes. It should be noted, however, that the level of concern of non-technical representatives did not differ greatly from other representatives, although non-technical representatives had often received less information than other representatives. One representative expressed a higher level of concern about the potential negative impacts of PRW, a concern that was reflected in their organisation's explicit consideration of strategies to deal with the potential issue of negative competitor marketing.

A number of factors seemed to give representatives confidence that any negative impacts would be negligible or easily overcome. Representatives mentioned their onsite water treatment, monitoring and quality control measures, scientific knowledge about the recycling treatment processes, the universal delivery of PRW to all South East Queenslanders, and the temporary nature of community and media concerns about the issue. Mention of these factors seems to suggest that representatives believed that the negative impacts will either not arise (e.g., because of shared use of the resource) and will be short-lived if they do arise or can be overcome through communication of the company's quality control processes and/or scientific knowledge about the recycling processes.

The impact of the introduction of PRW on waste water regulation was also mentioned. In some cases, organisations experienced greater scrutiny of their waste water and the potential chemicals that could end up in waste water. There was also evidence of increased attention to compliance with existing waste water regulations.

The majority of representatives had positive personal attitudes toward PRW, with most expressing a willingness to drink it. This finding accords with our previous research within the Systematic Social Analysis project that demonstrates majority support for PRW from community members and technical people (Nancarrow et al., 2007, Alexander et al., 2008, Browne et al., 2008). In some cases representatives were very supportive of the introduction of PRW, again, perhaps because of their scientific and/or engineering background. In the Q-methodology research involving participants from technical or water-related backgrounds, positive attitudes toward PRW were also high (Browne et al., 2008). In the current research, support for PRW seemed to be largely underpinned by the perceived need for security of water supply - representatives pointed out that all of the community, including businesses who are high water users, will benefit from the scheme. Representatives' acceptance of the scheme also seemed to be underpinned by relative water quality judgements and in some cases experience with recycled water in other countries. Almost all representatives made some mention of the contaminants in the existing dam water, the implication being that PRW does not pose a greater risk than already exists. Again, this line of reasoning is evident in our previous research (e.g., Browne et al. 2008).

In this industry phase of the project, the majority of representatives were supportive of the introduction of PRW without a referendum. PRW was seen as a necessity given the current water crisis and most agreed the government should be decisive and take control. The majority of representatives thought that there should have been much greater forward planning in relation to water management in SEQ. These results again echo those of our previous research (Alexander et al. 2008). Some representatives also suggested a need for much greater communication and education of the community about PRW.

The community at large and SEQ businesses were considered to be beneficiaries of the PRW scheme. Bottled water companies were also suggested as beneficiaries, a suggestion that recognises the resistance of some community members to drinking it. There did not seem to be high levels of concern about increased water prices, although one representative stated that it was now being factored into the price of their production, rather than being seen as an overhead cost. Some representatives voiced the view that it was important for water to be appropriately priced, a view that seems to recognise the scarce and valuable nature of the resource.

A limitation of the present study was that the sample was dominated by representatives with technical knowledge who had an engineering or scientific background. Efforts were made to speak to both technical and marketing representatives in each organisation, however, fewer marketing representatives agreed to participate in the research. Initial contacts revealed that this was due, at least in part, to a perception that the issues surrounding PRW were not as relevant to them as to those with technical expertise. Future research could address this limitation by contacting and interviewing marketing representatives after PRW has been introduced. Further interviews at a later date would also enable issues of public perception and competition to be investigated further.

In summary, the current research investigating industry perspectives of PRW contributes to a 'whole of community' approach to understanding water management issues in SEQ. The research in the Systematic Social Analysis project to date has focused on community and technical perspectives. The findings of this study expand this understanding to include the perceptions and attitudes of SEQ businesses and peak bodies with members situated in the region. Representatives' more general views of PRW are consistent with findings from our previous research. More specifically, representatives generally expressed confidence in the PRW scheme and, although they acknowledge the potential for negative impacts to industry from community resistance or negative marketing, most seemed to have confidence that these negative impacts could be managed.

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