When Public Opposition Defeats Alternative Water Projects - the Case of Toowoomba Australia

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Disciplines
Business | Social and Behavioral Sciences

Publication Details
When Public Opposition Defeats Alternative Water Projects – the Case of

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Abstract

Located approximately 100km west of Brisbane, Toowoomba is home to approximately 95,000 people. Surface water from dams is the main source of water for the city. In 2006 the residents of Toowoomba were invited to vote in a referendum (plebiscite) concerning whether or not an indirect potable wastewater reuse scheme should be constructed to supply additional water to the area. At that stage dam levels in Toowoomba were at approximately twenty per cent of capacity. Toowoomba residents, after intense campaigning on both sides of the referendum debate, voted against the proposal. In July 2008 dam levels dropped to eleven per cent. Stage 5 water restrictions have been in place since September 2006, subsequently mains water must not be used for any outdoor uses. This paper describes in detail how public opposition in the case of Toowoomba’s referendum, defeated the proposal for a water augmentation solution. Reasons for the failure are analysed. In so doing, the paper provides valuable insights with respect to public participation in indirect potable reuse proposals, and discusses factors including politics, vested interest and information manipulation. This paper is significant because of the lack of detailed information published about failed water infrastructure projects.

Keywords: water recycling, participation, public acceptance, public opposition, Toowoomba, referendum, CADS
Introduction

Australia is in the midst of a water crisis. The water supplies of many of the country’s major urban centres are dwindling. When compared to capital cities, the water situation is often much more critical in regional areas such as Toowoomba. Although many solutions to the water crisis have been proposed, national policy in Australia has predominantly focused on supply side solutions such as water recycling and desalination (Hurlimann 2006). However, in addition to these sources, a range of other alternative water sources and management options are available including the use of, grey water (domestic wastewater excluding toilet waste), stormwater, and water conservation – a demand side strategy.

In Australia, the use of recycled water for drinking purposes is subject to numerous guidelines including those at a National Level (Natural Resource Management Ministerial Council et al. 2008). However, the viability of alternative water sources also depends on public attitudes. Several recycled water projects in various countries have failed due to lack of community support (Hurlimann and McKay 2004). These projects include indirect potable reuse schemes in the USA and Australia, and also non-potable reuse projects including one in the Netherlands. Elements contributing to the demise of these projects involved the public’s lack of trust in the institutions charged with delivering the projects (Hurlimann and McKay 2004). As described by Hurlimann and McKay (2004) anecdotal evidence from such projects suggests that factors including timely communication with stakeholders, transparency in the projects' process and fairness in the way in which it is implemented are critical. In a similar vein Dishman et al. (1989, p. 158) conclude that technical aspects of potable water reuse can be resolved, but “the issue of public acceptance
could kill the proposal”. Additionally, Postel (1997) highlights a major barrier to reuse of wastewater is psychological not technical.

In order to reduce the risk of potential failure of alternative water projects, it is essential to understand the context of such cases. Unfortunately cases where public resistance prevented water augmentation schemes are not well documented. Thus other locations planning the introduction of alternative water sources can not easily learn from these experiences. Understanding how to facilitate public participation in decision making, and the role that public interest groups have is also important. Public interest groups include those opposed to desalination, such as ‘Sydney community united against desalination (SCUD), and those opposed to the concept of drinking recycled water such as 'Citizens against drinking sewage' (CADS).

CADS were present in Toowoomba before the referendum, but this was not the first project the group were opposed to. CADS were first present in an earlier Queensland indirect potable reuse proposal for the area of Maroochy. This plan was driven by community concern for environmental impacts of ocean outfall of sewage (Simpson 1999). The project was in the final stages of public consultation when CADS campaigned against the project, fearing the effect of the possible presence of ‘gender-bending’ hormones in the water (Stenekes et al. 2001). While the local government (the Council) voted in favour of the proposal, the plans for potable reuse were later abandoned. Stenekes et al. (2001) believe that the Maroochy case was complicated by CADS perceiving a lack of adequate consideration for stakeholders in the consultation process, and feeling that the process was not transparent. CADS believe the Council voted to implement the potable reuse strategy
despite evidence that sections of the community would not support potable reuse (Stenekes et al. 2001).

The aim of this paper is to fill this gap in understanding of failed potable recycled water projects through three research objectives (1) to provide a detailed description of one case where public resistance has led to the abandonment of a project aiming to augment water supply through indirect potable reuse (the case of Toowoomba, Australia), (2) to identify factors leading to the Toowoomba community’s opposition to the indirect potable reuse proposal, and (3) assess Toowoomba community attitudes to recycled water two years after the referendum (which was critical to our interpretation of all the data gathered for this research).

The paper is structured as follows. In section two we outline our research method. In section three, we present Toowoomba’s water history in chronological order. This section contains development which took place in 2005 and 2006. In section four we present and discuss the situation in Toowoomba three years after the referendum. Finally, in section five we provides overall conclusions which integrate the results from each of the methods employed.

2 Method
Toowoomba was used as a case study of attempted introduction of indirect potable reuse. As advocated by Eisenhardt (1989) our case study method combined various data collection modes such as archival research, interviews, focus groups, observations and survey. These divergent data collection methods allowed the collection of information
about the events that took place in Toowoomba surrounding the referendum. The research consists of three main components: 1) The analysis of a. topical internet blog sites, and b. information brochures developed by various organisations and which were publicly available, 2) qualitative empirical research, consisting of a focus group and eight in-depth interviews with residents of Toowoomba in July 2008, and 3) quantitative empirical research conducted in January 2009 with 200 Toowoomba residents.

The purpose of the qualitative component of the research was to gain an in-depth insight into the current sentiments of the population with regard to alternative water sources and the drought in general. Respondents were recruited by a professional market research company who administered compensation payments. The focus group and interviews were conducted by one of the authors. On average the interviews lasted forty five minutes. The focus group session was one and a half hours in duration and consisted of ten participants. Responses were entered into a data set and were then coded and categorized by the second author. Krueger and Casey (2000) and Richards (2005) were consulted when analysing the qualitative data.

Responses obtained in the qualitative phase informed the question design of the quantitative survey. Data in this latter phase was collected using an Australian permission based internet panel which recruits respondents through a range of avenues (not only the internet) to ensure sample representativity. Respondents were paid a small monetary compensation for taking the time to complete the questionnaire. The interviews, focus groups and survey addressed a range of issues and explored various water behaviours including: drinking recycled water and desalinated water, conserving water, talking to
others about water issues, purchasing water related products, and joining a water interest group.

We used a number of theories to guide our analysis of the topical internet blog sites and information brochures developed by various organisations, and our synthesis of the three types of data collected. These theories included: information theory (McCornack et al. 1992); the first mover advantage theory (Lieberman and Montgomery 1988; Robinson and Fornell 1985; Carpenter and Nakamoto 1989), and theory regarding referendums and democracy (Heywood 1999 and Smith 2001). These theories are discussed in detail during our presentation of results.

3 The recycled water history in Toowoomba

Located approximately 100km west of Brisbane (the capital city of the state of Queensland), Toowoomba has a population of approximately 95,000 people. Toowoomba is known as 'Queensland's Garden City' (Toowoomba City Council 2007), hosting an annual 'Carnival of Flowers' each spring. In addition to this there are often Camellia and Winter Flower Shows. The city has a famous Park 'Queens Park' which is well known for its gardens and flowers (Toowoomba City Council 2001).

3.1 Water shortage in Toowoomba

Toowoomba’s water comes from three major storage areas (Lake Cooby, Lake Perserverance and Lake Cressbrook). The supply in these three storage areas has been depleting due to declining rainfall over the catchment areas (Parsons Brinckerhoff Australia Pty Ltd 2006). Toowoomba’s population is increasing and so is industrial development
In 2005, the average residential water use in Toowoomba was 240 litres per person per day, compared to 300 litres in South East Queensland (Toowoomba City Council 2005b). However, since water use restrictions have been in place, per capita water use in Toowoomba and other areas of South East Queensland has decreased. In Toowoomba per capita residential consumption was 151L/day in January 2009, however it was 123L/day during the same period in 2008 (Toowoomba Regional Council and Toowoomba Water 2009). The total water demand in Toowoomba in 2006 was estimated to amount to 17,510 ML/annum, thus exceeding supply (Parsons Brinckerhoff Australia Pty Ltd 2006).

Because of the critical water situation, Toowoomba residents have been faced with restrictions to water use since 2003. Level 1 restrictions began in 2003, ultimately reaching level 5 restrictions in 2006, which remain today. Restrictions to water use typically involve banning outdoor use of water (for gardens) at certain times of the day, and become increasingly restrictive the higher the level. For example in Toowoomba, Stage 5 water use restrictions prohibit town water use for watering of gardens, topping- up of pools, and washing of vehicles (for further information see: Toowoomba City Council 2008). Implications of restriction levels vary across water authorities throughout Australia, thus there is not a consistent state or national approach to restrictions.

In the financial year 2005/2006 the Toowoomba Council committed AUD850,000 (at 22/06/09 AUD1 = US$0.80 and €0.58) to a Water Demand Management Initiative, as part of this initiative residents were offered rebates for installing rain water tanks (AUD500), AAAA rated (highly efficient) washing machines (AUD50), and could have their shower...
heads replaced at no cost. Since 2005 all new developments have to install rainwater tanks (Toowoomba City Council 2005).

3.2 The recycled water proposal

The Toowoomba Council lodged a submission to the National Water Commission for funding towards the project on 30 June 2005. The submission was unanimously supported by all 9 Councillors (elected representatives at local government level), and by all local members of State and Commonwealth Parliaments (Thorley, 2007). On the 1st of July 2005, Toowoomba City Council announced the ‘Water Futures Initiative’. The initiative was launched to address the city’s water challenges. The project includes a range of solutions, most prominently the construction of an advanced water treatment plant to provide potable quality recycled water for the town (Toowoomba City Council 2005b). This was principally a policy document, not a public communication document. However, as part of the proposal, Toowoomba City Council was planning to undertake a three year community engagement program (Thorley 2007).

The Water Futures Initiative was launched by the Federal Member for Groom (including Toowoomba), the Honourable Ian MacFarlane, the then Queensland Premier, the Honourable Peter Beattie, and all three local Members of State Parliament (Toowoomba City Council 2005a). The Council expected funding to be approved in September or October 2005 (Thorley 2007).

3.3 Public opposition against the recycled water proposal

In reaction to the Water Futures Initiative, the CADS Toowoomba group formed on the 21st of July 2005 and held their first public meeting on the 25th of August 2005 (Toowoomba
Water Futures Blog 2006). Half a year later, on the 24th of February 2006, 10,000 people had signed the CADS petition against the potable recycled water initiative (Reynolds 2006). This public movement against the indirect potable recycled water use politicised the project. Thorley, as mayor of Toowoomba at the time, identified that this moved the focus to be no longer on water but on politics and vested interest, leading to political back-flips and the withdrawal of support of the project by Macfarlane, three Councillors and the local National Party State member (Thorley 2007).

Given that the original Water Futures Initiative proposal was not directed at the general public, CADS were in fact the first to communicate their view and provide detailed arguments in support of their view to the public. In so doing CADS benefited from a ‘First Mover Advantage’, which is “the ability of pioneering firms to earn positive economic profits” (Lieberman and Montgomery 1988). In the case of CADS it was not positive economic profits that they earned. Instead, being the first to communicate with the public, they became the benchmark information source for matters relating to the proposed recycling project. This gave CADS significant market power and made it more and more difficult over time, for any positive message about recycled water to be communicated successfully to the residents of Toowoomba. Such consumer information advantages have been achieved through the learning process of consumers are in line with the findings reported by Robinson and Fornell (1985) and Carpenter and Nakamoto (1989).

3.4 Announcing the referendum

On the 24th of March 2006, Mr Malcolm Turnbull (Parliamentary Secretary to the Prime Minister) announced that a referendum will be held asking the residents of Toowoomba
whether or not they were supportive of the Water Futures Project. In case of a positive vote, the Federal Government was promising to contribute AUD22.9 million towards the project (Mitchell 2006). Mr Turnbull’s motivation for calling a referendum is unclear, especially given that (1) the National Water Commission had recommended to the Prime Minister that the project be approved, and (2) Commonwealth funding for a similar project in Goulbourn was approved without a referendum subject to a six month consultation with the public, and (3) the Queensland government had to make a special regulation to allow the vote to proceed. Thorley (2007) views the Commonwealth Government’s decision to approve funding for the project subject to a referendum as a dangerous precedent, stating that “The decision was an abrogation of political leadership and usurped the democratically elected Council’s mandate for making decisions relating to its community” (p.50).

It is possible that Mr Turnbull’s decision was motivated by the increasing public opposition developing in Toowoomba.

Toowoomba City Council was not pleased with the referendum. In fact, they had actively campaigned to Mr Turnbull against the referendum, pointing to poor records of referendums without bipartisan political support, and cognisant of the fear campaigns that tend to dominate political debate (Thorley 2007). These arguments are partially supported by theory on democracy and referenda. According to Heywood (1999) models of democracy range from the classical idea of direct democracy in which people literally govern themselves through to more modern forms of representative democracy where professional politicians govern on behalf of people. Referendums are a form of direct democracy, which are used widely in some countries such as Switzerland (Heywood 1999).

The way in which referendums are implemented, and the influence they have on decision making, varies from jurisdiction to jurisdiction (Ashworth 2001). As discussed by Smith
(2001) there are positive and negative aspects of all methods of deliberation. Those in favour of referendums believe that they have the capacity to widen the political agenda; are more likely to overturn established pro-business policy than normal parliamentary proceedings; and are a mechanism by which groups within civil society can challenge the government to defend status-quo (Smith 2001). Common arguments against referendums include the belief that ordinary people lack the time, maturity and specialist knowledge to rule wisely on their behalf (Heywood 1999). However, on the contrary most studies suggest that voters exercise shrewd judgement despite the complexity of measures and the deceptions of some campaigns (Heywood 1999). Additionally in opposition to referendums, it has been highlighted that consulting the general public on each and every issue could paralyse decision making and make a country ungovernable (Heywood 1999).

Importantly, as highlighted by Heywood (1999), referendums suffer the effects of material and social inequalities. These such issues include but are not limited to 1) uneven participation in referendums by minority groups, 2) a growing influence of money, paid petition circulators, direct mail deception and deceptive advertising campaigns, and 3) media manipulation – particularly when business interests are threatened. Many of these problems identified by Heywood were present in the Toowoomba referendum.

3.5 **Council’s attempt to rescue the Water Futures Initiative**

When the referendum became unavoidable, Toowoomba City Council started 10-week information campaign and distributed a Water Futures booklet which contained explanations about the water cycle, the current level of water supply as well as possible water alternatives on the 20th of March 2006 (Donaghey 2006). This put Toowoomba City
Council in the situation of (1) having to condense a proposed three year community engagement program – consisting of public fora, flyers, taste testings of recycled water and on request public presentations (Toowoomba City Council 2006a, 2006c) - into a three month local political campaign (Thorley 2007), and (2) face the substantial first mover advantage of CADS. By the time Council started informing the public, CADS had been communicating with Toowoomba residents for more than half a year.

The main proponents of the Water Futures Project were Toowoomba Council, the Mayor of Toowoomba at the time (Ms Dianne Thorley), Mr Malcolm Turnbull, as well as State and Federal Governments. Examples of the ‘yes’ campaign material are referenced in Table 1. These were predominantly produced by the Council and were factual. Personal testimonies by upstanding members of the community were used to promote the scheme.

It should be noted that, as opposed to CADS, Council were bound by Codes of Conduct, and thus had to ensure that campaign content was at all time ‘above board’ (Thorley 2007).

In response to the CADS campaign arguments, the Council presented the following messages:

1) Communities around the world use recycled water for drinking. Examples were given including Orange County and Virginia in the USA since the 1970s, Singapore since 2003 and Namibia since 1968 (multiple campaign brochures including the prominent: Toowoomba City Council 2006b).

2) The reputation of the Toowoomba food industry will not be at risk: Water used in food processing is required to meet Australian Drinking Water Guidelines. The six
star recycled water treatment far exceeds these guidelines (multiple campaign brochures including the prominent: Toowoomba City Council 2006b).

3) Recycled water is safe and will produce water as safe as current drinking water because of the ‘Advanced Water Treatment Plant Purification Process’. Academics and General Practitioners (doctors) were quoted about safety in multiple campaign brochures (including items listed in Table 1). Diagrams of the ‘seven barriers of water futures – Toowoomba’ were provided in multiple Council brochures. It should be noted that when the Australian national recycled water guidelines were first drafted (Natural Resource Management Ministerial Council et al. 2006) they did not include indirect potable reuse as a possible option, this has since been addressed in phase two of the guidelines (Natural Resource Management Ministerial Council et al. 2008).

3.6 More public opposition

While Council commenced its campaign, the campaigners against the Water Futures Project continued to use public meetings, petitions and internet blogs to activate residents to vote “no” at the referendum (O’Malley 2006). The key opponents of the Water Futures Project who were rallying for a “no” vote were CADS (led by Rosemary Morely, a past president of the Chamber of Commerce), Clive Berghofer (a millionaire property developer and former local mayor) as well as members of the public who posted their concerns in internet blogs (of which there were more than three). One blog (waterfutures.blogspot.com) claimed to be impartial, yet the majority of contributions were arguing against the recycled water scheme. Some water experts from industry and University contributed to the blogs.
Examples of initiatives from the ‘no’ campaign include a newspaper printed by Clive Berghofer called “Water Poll” which was dedicated solely to arguing against the recycled water scheme (Berghofer 2006). Table 1 provides more extensive references to pictorial material produced by the ‘no’ campaign. As can be seen from this material, much of it was driven by emotions, and at discrediting sources of factual information. In addition to pictorial material, there was reading material and videos produced by each side of the campaign.

Insert Table 1

The main reasons against the recycled water scheme stated by the opponents were as follows:

1. People were concerned about the image of Toowoomba. They were worried that their image as Garden City would change to an image of being the “Shit City” or “Poowoomba” (Balderson 2006).

2. As a consequence of such an image residents were concerned that Toowoomba would become less attractive to businesses, industry, families, retirees and travellers both as a tourism destination and as a place to live (Concerned Ratepayer 2006; Frew 2005). One illustrative case was that of an ice cream factory in Toowoomba which claimed that it could never use Toowoomba’s town water for production because the market would not tolerate any question mark over the water quality (SBS Network 2005). The same was claimed to be true for all businesses in the food industry (Clark 2006).

3. Residents had health concerns. They were not sure if they could trust science; they were irritated that the Toowoomba Council refused to state that the water was 100% safe and...
stated that they felt like “lab rats” (Berghofer 2006). Furthermore they were concerned that there were no official guidelines for the quality of recycled drinking water and that a twenty-five per cent component of recycled water in tap water is very high by international standards (Concerned Ratepayer 2006). Laurie Jones, an Australian plumber interviewed on television (SBS Network 2005), summarized these fears:

“Well, the problem with the purifying, and my biggest concern, is that the impact of drinking treated sewage wastewater will have on my family and all other families. And I'm concerned because there is no guarantee, there is absolutely no evidence that the treated sewage wastewater is free of all contaminants. And along those lines, in Australia, there's no health department that approves it presently.”

3.7 Toowoomba votes

On the 29th of July 2006 the referendum was held in Toowoomba. The majority, 62% of residents, voted against the proposed recycled water scheme. As a consequence the Water Futures Project was abandoned (Australian Associated Press 2006).

The internet blog sites have continued, in light of a new indirect potable recycled water proposal for Brisbane with implications for Toowoomba – The Western Corridor Recycled Water Scheme (described in section 3.3 below). CADS have reproduced campaign material for Brisbane households (Water Futures Blog 2007). As reported by the Science Media Centre (2006), one water engineer from Toowoomba City Council said he was frustrated, angry and disappointed. He was especially frustrated that the debate was “not based on science. It was not a debate about water, but about politics and vested interests”.

Another water expert was quoted as saying: "The No in Toowoomba is ultimately a failure
in communication, first on the safety and reliability and second on the urgency of
Australian water crisis” (Science Media Centre 2006).

The conclusion Thorley (2007), as the Mayor of Toowoomba at the time of the referendum,
draws from the events is that the way forward for indirect potable reuse is for governments
to forget referendums, plebiscites and polls which will always be at the mercy of negative
campaigns and are thus likely to fail. Instead, politicians need to have vision and leadership
and decide to implement such schemes, or else, alternative ways of measuring community
acceptance need to be developed.

Interestingly more recent research by Miller and Buys (2008) through which 410 household
questionnaires conducted in South East Queensland found that the majority of respondents
believed that the general community did not have adequate knowledge to vote on indirect
potable reuse. The majority of respondents were found to be supportive of the
government’s decision to implement the recycled water decision without a referendum. It
is clear that political / decision making processes have been a significant influence in the
indirect potable reuse plan outcomes in Toowoomba.

4 Toowoomba two years after the referendum

4.1 Political developments

On the 28th of January 2007, Peter Beattie, the then Premier of Queensland, publicly
announced his decision not to let the public vote on whether or not to proceed with a large
scale recycled water project for the State's capital city Brisbane. This was contrary to his
prior commitment to a referendum. The Premier argued that even if the public were
opposed, there is no other option than to put in place ways to augment water such as recycling (Australian Associated Press 2007). The project soon began construction and was completed at the end of 2008. It involves six wastewater treatment plants (WWTPs) (Luggage Point, Gibson Island, Bundamba, Oxley Creek, Goodna and Wacol), connected to Wivenhoe dam (Brisbane's main dam). Three separate Advanced Water Plants have been constructed: one at Luggage Point (receiving water from the Luggage Point WWTP), Gibson Island (receiving water from the Gibson Island and Luggage Point WWTPs) and Bunamba (receiving water from the other four WWTPs). For further information see Western Corridor Recycled Water Project (2008). In response, CADS members distributed a booklet titled ‘think before you agree to drink’ to 500,000 Brisbane households in early 2007 (Roberts 2008).

In July 2008 the Member for Toowoomba South, Mike Horan announced that a pipeline would be constructed from Wivenhoe Dam (Brisbane's main dam to which the above recycled water would be delivered) to Lake Cressbrook in order to address Toowoomba’s water demand (Australian Associated Press 2007). Consequently Toowoomba will be supplied with recycled water (Western Corridor Recycled Water Project 2008) despite the negative referendum vote. However, more recently, the current Queensland Premier Anna Bligh announced that treated wastewater will only go into the dams when they fall below 40% of capacity (ABC News 2008). Brisbane's dams were at 74% of capacity at 29th May 2009 after significant rainfall over the past 12 months, thus the recycled water will not be put into the dam at present.
Based on the referendum history, it could be expected that Toowoomba residents hold negative attitudes towards the Western Corridor Recycled Water Project. It would logically be expected that Toowoomba residents would be concerned that the State Government has ended up building a recycling plant which will feed into their water supply system despite the negative referendum. Interestingly these feelings were not expressed by the respondents who participated in the interviews and focus group during July 2008 and the survey in January 2009, the results of which are described in detail below.

4.2 Residents’ attitudes

Details of the empirical results from both the qualitative and quantitative study are now presented. Firstly respondents’ opinions about Toowoomba’s water situation are detailed, followed by their attitudes to the use of recycled water, and the referendum which was held. Lastly information needs of respondents are identified.

With respect to residents’ opinions about Toowoomba’s water situation, they generally agreed that Toowoomba will run out of water unless action of some kind is taken. Having a rainwater tank is a common solution to the problem, many participants use tankwater for multiple purposes, including drinking. Respondents were attuned to the fact that with below average rainfalls, rainwater tanks may no longer be a solution to the water problem. They were also aware that the tank size they currently have would not cover all their needs if the water situation got worse.

Respondents felt strongly about people who break water restrictions and/or steal other people’s water tanks or tank water (which is reportedly common). There was a perception
that the Council was not actually enforcing whether or not people comply with the water restrictions, and thus respondents held a belief that offenders are not prosecuted. Respondents proposed that there should be more control and fines for offenders. Some respondents thought that making above average water use very expensive would be an appropriate and indirect way of punishing people for excessive use.

Water conservation was an expressly important concern for all participants. It appeared that all respondents were actively conserving water. Stated water conservation measures included, but were not limited to: taking short showers, reusing washing machine water on the garden, using water saving shower heads, and fixing leaks. As stated by one respondent: “I am absolutely disgusted by people who do not save water, I want to drown them in their own water.” This demonstrates the strong emotions surrounding water and its status as a public resource.

Table 2 contains results from questions about water conservation asked in the survey of 200 Toowoomba residents. Respondents were presented with a series of statements about water conservation and asked to state whether they agree or disagree with the statements.

As can be seen from Table 2, the attitude of Toowoomba residents towards water conservation is overwhelmingly positive with 99% of respondents stating that it is important, 95% stating they conserve water wherever they can and only 10% or less feeling no pressure to conserve water or feeling that it is not their responsibility.
With respect to residents’ attitudes to water recycling, five interview respondents stated they have no reservations about recycled water at all. One respondent stated they dislike the chlorine (but admits that this is a problem not only related to recycled water but also the current tap water – they prefer to drink “the shit and leaves in the tank water”). Another respondent had no concerns, as long as the recycled water had been approved by scientists. Only one respondent categorically refused to use recycled water for drinking, stating:

“I won’t drink it - just me personally, I don’t think I would let my children drink it either. Because you can buy bottled water, but now they are saying it might not be that good either. Well it’s like any machine, how it works and everything … if it doesn’t work properly or it leaks a little bit, it only needs to let a little bit in, doesn’t it?”

One interview respondent directly mentioned the referendum. When asked how they feel about recycled water the respondent replied:

“It doesn’t bother me - they are going to stick other germs in it to get it the same. How do they know that with the normal water you drink, someone hasn’t gone and crapped in it. It is not going to impact it. Fish and turtles swim in it. Some people just don’t think about it. That was when the vote was in. It was stupid, it just should have gone ahead. I don’t think things would change now - people are still afraid of getting turds in their water, I think it is stupid.”

This shows that the respondent acknowledged that water from dams also has impurities at source, but is managed in the treatment process. When asked whether they would drink recycled water if the drought got worse, the majority of respondents said that they would be quite happy to use and drink it now. Arguments made by respondents in support of their view included that recycling water would simply increase water supply and thus allow
water uses which under current restrictions are not permitted. For example one respondent made the following comment:

“My husband and I thought it was the best thing coming. When I had my first daughter the restrictions weren’t so bad. You could fill up her little pool and have a little splash but with my second one there is none of that you can’t go out and have fun like that - like we did when we were kids”

Other respondents commented that recycled water may in fact represent an improvement over current solutions. For example:

“They have just scientifically proven that recycled water is better than tank water. I’m drinking pesticides”

Respondents mentioned that while there might be a little risk of some contamination of the recycled water, it is rather unlikely:

“We are going to have to do it eventually, and it really doesn’t worry me. The scientists have said it is ok. There is only one thing: sometimes scientists say something, then 10 years later they say, oh we were wrong. Can they guarantee 100% that the water is safe, not one little micro organism. It might come and bite them, but the possibility of that is very, very rare”.

Most respondents who first expressed a negative reaction to recycled water use, subsequently changed their attitude when asked to consider necessity. Only one of the respondents, who expressed a negative attitude towards recycled water originally, indicated that they would not change their attitude even if the drought got worse:
“I won't drink it, I would bathe in it and everything else. You've got Gatorade and other things for drinking. If they put recycled water in the supply I would buy other water for drinking”

Table 3 presents the results from the survey which relate to attitudes to recycled water use. Respondents were presented with a series of statements about water recycling and were asked to state whether they agree or disagree with the statements.

Insert Table 3

As can be seen from Table 3, most of the statements that have achieved high agreement levels relate to safety issues relating to recycled water. Strict controls of recycled water are demanded by 96% of respondents and two thirds state that they would like to have more information about how recycled water is treated and how safe it is. Despite the stated safety concerns almost half of the Toowoomba residents agree that recycled water is safe to drink. About one third of respondents had very negative feelings about recycled water, agreeing that it is disgusting and that it tastes / smells bad. Another interesting finding, a likely consequence of the referendum in Toowoomba, is that 28% of the respondents agreed with the statement “They should supply recycled water without asking the public”.

When asked about the referendum, it was clear that the information campaigns from both sides of the referendum had an impact on the emotions of participants. One participant (P1) in the focus group was against the use of recycled water for drinking purposes based on
concerns about radioactive material (from hospitals). The interaction between participants at this point is found below:

P1: “If they worked out the radioactive business I wouldn’t have a problem”

P2: “As I understood it, you know the little booklet that came out in opposition to CADS, well all the filters, those molecular filters will not let molecules through, those molecules carrying radioactive charge...they will be stopped there. I think the radioactive argument stops there because those filters – and there are seven of them – each one is designed to filter out something specific. Even atoms can’t get through”....

P1: “How big is an AIDS virus?”

P3: “We have a friend who is a pharmacist who says you can’t get all of it out, the hormones etc.”

P1: “It has to be stopped at source”

P2: “I disagree with that because a virus is much bigger than a molecule”

P4: “If there was no water, I’d drink anything”

P2: “Two atoms of hydrogen and one of water is not very big”

Respondents clearly felt that the Council information was a reaction to CADS. It also confirms the first mover advantage CADS appears to have had with having their message in public before the Council. The discussion above shows how important ‘expert friends’ (pharmacists), are in shaping attitudes to recycled water. When asked about barriers to drinking recycled water, the main barrier identified by participants was the need for accurate information which was ‘untarnished’, ‘unbiased’, ‘scientific’, and ‘the truth’.

When asked about incentives to drinking recycled water, respondents again identified information.
P5: “Good information on what filters remove. Are men going to become women? Scientific information from someone from a University who is not funded by a company building the plant.”

ALL: “Agree”

P5: “I would really like Australian information at least in relation to our temperature and humidity” [regarding the treatment process]

P6: “It would be interesting to have one brochure on all drinking alternatives: desalination, recycled, tank, bore, and have the information on all of them so you could decide which to drink…”

P1: “The information should not be a sales pitch from one party or the other. Because the information we got here was a sales pitch from one side or the other”

P4: “It was very biased”

P8: “It was a scare campaign”

P7: “Scare mongering. This is what happens a lot. People with vested interests”

P8: “We won’t mention any names, but certain land developers”

P4: “Didn’t want to scare anyone from buying in Toowoomba”

This excerpt from the focus group demonstrates the need to provide unbiased and impartial information. It is clear that respondents were not satisfied with the information campaign surrounding the Toowoomba referendum, and did not seem to trust ‘either side’. This relates to Heywood’s (1999) identified limitations to referendums as discussed in section 3.2. A number of respondents indicated the need for information about the cleaning process that takes place with recycling (specifically scientific information from someone who has no conflict of interest) and comparative information about all kinds of water from alternative sources.
The results from the survey confirm the sentiments of the focus group. As shown in Table 3, sixty six percent of respondents stated that they need more information on how recycled water is treated and how safe it is. Sixty five percent stated that it would be acceptable to them is if scientists approved of it for human consumption (see Table 3).

Respondents were asked who would influence their opinion about recycled water use. About half of the interview respondents stated that nobody would influence them. The following sources of influence were mentioned by other respondents: scientists, their General Practitioner, information on the internet and information obtained from locals who are seen as having no particular agenda with respect to recycled water. One respondent provided an illustrative example:

“Well, we were about to vote. We were thinking of no, but a scout leader we knew in the area said by voting no we were not going to get the federal government money, so vote yes. He did clarify a lot. We had a good talk about it. With the medication he said we wouldn't even know. He told us that Dolby (a near by town) has had it for years and you wouldn't even know.”

The responses indicated that those participants who were open to consideration (who had not already formed a firm opinion about recycled water), were interested in obtaining more information. They sought information from a wide range of sources including from experts, in general, on the internet, or even interested respected non-experts from within the community.

When asked about what others would think about them drinking recycled water, there were a number of responses from participants of the focus group, with one saying that it would
“depend which side of the fence they are on”. One respondent clearly stated they don’t mind what others think: “I don’t think I would let someone else’s opinion worry me actually. If I was thirsty, it is simple as that.” Another participant questioned: “Who cares?”

Results from the survey, regarding people of influence to respondent attitudes towards water related matters, are presented in Table 4. Respondents were asked “Who or what could influence your attitude towards water related matters (e.g. the use of water efficient appliances, the use of recycled water etc.)?” A list of people / factors were presented and respondents were asked to indicate whether each was an influence (yes / no), these were drawn from results of the in-depth interviews.

Insert Table 4

The results in Table 4 indicate that objective sources of information are perceived as more influential be Toowoomba residents. Politicians received the lowest rating with only nine percent of the Toowoomba population agreeing that they would influence their attitudes.

In sum, the insights gained through the focus group, the interviews and the survey indicate that overall, respondents were open-minded about recycled water and in many instances regretted that indirect potable reuse was voted against. People were well aware of their dependence on water (especially having a very strong garden city culture) and acknowledged that insufficient water supply may well force them to relocate.
5 Conclusions

The referendum on indirect potable reuse in Toowoomba was perceived by the Council to be forced upon them, a condition of Commonwealth Government funding. The Council’s preferred approach was a three year consultation program. As such, the Council’s resultant public consultation was rushed and the government information campaign commenced many months after public interest groups started mobilising the residents of Toowoomba to vote against the recycling scheme. The impact of this was evidenced in the focus group discussion and could be one explanation for the negative vote. Another explanation could be information in general and the difficulty participants had in trusting information sources. Participants raised concerns about information and sources of bias on both sides of the referendum.

Interestingly, the public resistance clearly expressed at the referendum was not mirrored in people’s attitudes towards recycled water as evidenced in this study conducted 2 – 2.5 years post referendum. Participants were very aware of water issues and were found to actively contribute to local solutions (such as water conservation and the use of rainwater tanks). Given that the Queensland government is building a large scale recycling plant, the Toowoomba residents may end up with indirect potable reuse. Perhaps knowledge of this was a contributing factor to the more positive attitudes toward recycled water found in this study. Many media statements made by CADS in the lead up to the referendum mentioned that Toowoomba did not want to be the first, or the only location in Australia to drink recycled water. Thus knowing Brisbane (the State’s capital city) would also be drinking recycled water may have allevied some concerns.
The research conducted and presented in this paper indicates that the failure of the Toowoomba indirect potable reuse plans, can not just be attributed to public opposition to the plans. Politics, timing, vested interests and information manipulation also played a part. The case of Toowoomba raises fundamental questions regarding public participation in government decisions and the way in which democracy is exercised. As a consequence of the Toowoomba referendum, the Queensland state government chose not to put critically needed alternative water projects to a public vote. Currently a large scale recycled water scheme is being implemented, which will in fact lead to recycled water being fed into the dams that are the source of Toowoomba’s water supply. It may well be that such an approach is more effective in achieving the ‘public interest’. A question this raises is how should the public be involved in decisions which have unavoidable consequences for them?

It would be beneficial to conduct research in the future to better understand the impact politics, vested interests, information manipulation, and timing each had on the Toowoomba referendum, and the potential impact such factors may have in future projects.

6 Acknowledgements

This study was funded through Australian Research Council (ARC) Discovery Grant (DP0878338). We thank Sarah Oberklaid, Ben Posetti, Katrina Matus and Sharon Lum for research assistance provided. The helpful comments of blind reviewers of the article are appreciated.
References


Parsons Brinckerhoff Australia Pty Ltd. (2006). Future Water Supply Options for Toowoomba City and Customer Shires Pre-feasibility Study. Department of Natural Resources, Mines and Water, South East Queensland Regional Water Supply
Strategy, Brisbane. Accessed on 19 September 2008 at:


<table>
<thead>
<tr>
<th>No.</th>
<th>Date</th>
<th>Title</th>
<th>Organisation</th>
<th>Web address</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>21/12/2005</td>
<td>The Downstream Boys</td>
<td>Water Futures Blog</td>
<td><a href="http://waterfutures.blogspot.com/2005/12/downstream-boys.html">http://waterfutures.blogspot.com/2005/12/downstream-boys.html</a></td>
</tr>
<tr>
<td>2</td>
<td>28/11/2005</td>
<td>I don’t know what is going through Council</td>
<td>Water Futures Blog</td>
<td><a href="http://waterfutures.blogspot.com/2005/11/humour-this-cartoon-has-appeared">http://waterfutures.blogspot.com/2005/11/humour-this-cartoon-has-appeared</a> inp.html#links</td>
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<tr>
<td>5</td>
<td>7/5/2006</td>
<td>Straight from sewage plant for you to drink</td>
<td>BlogToowoomba</td>
<td><a href="http://www.blogtoowoomba.com/entry.php?w=toowoombawatervote&amp;e_id=103">http://www.blogtoowoomba.com/entry.php?w=toowoombawatervote&amp;e_id=103</a></td>
</tr>
<tr>
<td>7</td>
<td>28/5/2006</td>
<td>Trick or turd</td>
<td>BlogToowoomba</td>
<td><a href="http://www.blogtoowoomba.com/entry.php?w=toowoombawatervote&amp;e_id=113">http://www.blogtoowoomba.com/entry.php?w=toowoombawatervote&amp;e_id=113</a></td>
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<td>9</td>
<td>31/7/2006</td>
<td>Truth told in pictures to the people</td>
<td>BlogToowoomba</td>
<td><a href="http://www.blogtoowoomba.com/entry.php?w=toowoombawatervote&amp;e_id=235">http://www.blogtoowoomba.com/entry.php?w=toowoombawatervote&amp;e_id=235</a></td>
</tr>
<tr>
<td>10</td>
<td>28/1/2007</td>
<td>I don’t want to die mummy</td>
<td>BlogToowoomba</td>
<td><a href="http://www.blogtoowoomba.com/entry.php?w=toowoombawatervote&amp;e_id=565">http://www.blogtoowoomba.com/entry.php?w=toowoombawatervote&amp;e_id=565</a></td>
</tr>
</tbody>
</table>

**Table 2: Select pictorial messages from both sides of the Toowoomba potable recycled water referendum**

* All websites were viewed and verified 20 January 2009
### Table 2: Attitudes towards water conservations expressed by Toowoomba survey respondents

<table>
<thead>
<tr>
<th>Attitudinal statement</th>
<th>Average agreement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water conservation is important</td>
<td>99%</td>
</tr>
<tr>
<td>Water conservation is necessary because of water scarcity</td>
<td>97%</td>
</tr>
<tr>
<td>More attention to water conservation is needed</td>
<td>95%</td>
</tr>
<tr>
<td>I conserve water wherever I can</td>
<td>95%</td>
</tr>
<tr>
<td>I advocate water conservation among my friends and family</td>
<td>80%</td>
</tr>
<tr>
<td>I could make more effort to conserve water</td>
<td>75%</td>
</tr>
<tr>
<td>I only conserve water if water conservation does not cause additional expenses for me</td>
<td>23%</td>
</tr>
<tr>
<td>Water conservation ALONE can solve Australia’s water problem</td>
<td>21%</td>
</tr>
<tr>
<td>I only conserve water if water conservation does not take more time</td>
<td>12%</td>
</tr>
<tr>
<td>I only conserve water if water conservation does not inconvenience me</td>
<td>11%</td>
</tr>
<tr>
<td>I feel no pressure to conserve water at the moment</td>
<td>10%</td>
</tr>
<tr>
<td>Water shortage issues don’t affect me</td>
<td>4%</td>
</tr>
<tr>
<td>Water conservation isn’t my responsibility</td>
<td>3%</td>
</tr>
<tr>
<td>I am not concerned at all with water conservation</td>
<td>3%</td>
</tr>
</tbody>
</table>

### Table 3: Attitudes towards recycled water expressed by Toowoomba residents (n=200)

<table>
<thead>
<tr>
<th>Recycled water attitudinal statement</th>
<th>Average agreement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recycled water would have to be strictly controlled</td>
<td>96%</td>
</tr>
<tr>
<td>Those who don’t like recycled water can install a rainwater tank to use</td>
<td>76%</td>
</tr>
<tr>
<td>I am cautious of what is actually in recycled water</td>
<td>70%</td>
</tr>
<tr>
<td>It’s OK as long as it’s clean</td>
<td>67%</td>
</tr>
<tr>
<td>I need more information on how recycled water is treated / how safe it is</td>
<td>66%</td>
</tr>
<tr>
<td>It’s OK if it’s absolutely necessary</td>
<td>66%</td>
</tr>
<tr>
<td>Those who don’t like recycled water can buy bottled water</td>
<td>66%</td>
</tr>
<tr>
<td>I think it’s OK if scientists approve of it for human consumption</td>
<td>65%</td>
</tr>
<tr>
<td>It’s OK for other uses but not as drinking water</td>
<td>63%</td>
</tr>
<tr>
<td>I am sceptical of how clean / safe recycled water is</td>
<td>62%</td>
</tr>
<tr>
<td>I have no problem with recycled water</td>
<td>50%</td>
</tr>
<tr>
<td>I think recycled water is safe for everyone to drink</td>
<td>49%</td>
</tr>
<tr>
<td>I don’t like the idea of recycled water</td>
<td>46%</td>
</tr>
<tr>
<td>There are too many health risks</td>
<td>45%</td>
</tr>
<tr>
<td>Recycled water is disgusting</td>
<td>37%</td>
</tr>
<tr>
<td>It is wrong to supply recycled water to people’s homes</td>
<td>32%</td>
</tr>
<tr>
<td>They should supply recycled water without asking the public</td>
<td>28%</td>
</tr>
<tr>
<td>The taste/smell of recycled water is bad</td>
<td>27%</td>
</tr>
</tbody>
</table>
### Table 4: Factors / people influential to respondent attitudes to water

<table>
<thead>
<tr>
<th>Factor / Person</th>
<th>Average agreement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research findings</td>
<td>89%</td>
</tr>
<tr>
<td>News / facts / other publicised information</td>
<td>86%</td>
</tr>
<tr>
<td>Consideration of future generations</td>
<td>84%</td>
</tr>
<tr>
<td>An individual or organisation qualified in water management</td>
<td>78%</td>
</tr>
<tr>
<td>A scientist</td>
<td>78%</td>
</tr>
<tr>
<td>Family</td>
<td>72%</td>
</tr>
<tr>
<td>An ecologist</td>
<td>71%</td>
</tr>
<tr>
<td>The water authority</td>
<td>69%</td>
</tr>
<tr>
<td>Friends</td>
<td>62%</td>
</tr>
<tr>
<td>My partner</td>
<td>60%</td>
</tr>
<tr>
<td>An environmentalist / an environmental group</td>
<td>55%</td>
</tr>
<tr>
<td>Conservation advertisements</td>
<td>49%</td>
</tr>
<tr>
<td>The media</td>
<td>39%</td>
</tr>
<tr>
<td>Neighbours</td>
<td>33%</td>
</tr>
<tr>
<td>The government</td>
<td>32%</td>
</tr>
<tr>
<td>A recognisable personality</td>
<td>21%</td>
</tr>
<tr>
<td>No one</td>
<td>17%</td>
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<tr>
<td>A politician</td>
<td>9%</td>
</tr>
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