Predicting Community Behaviour: Indirect Potable Reuse of Wastewater through Managed Aquifer Recharge

Zoe Leviston, Blair E. Nancarrow, David I. Tucker & Natasha B. Porter

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Cover Photograph:
Description: Flooded Murray River at Mildura, VIC
Photographer: Willem van Aken
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Executive Summary

This report describes the most recent work in an ongoing research program that has been designed to systematically investigate the major factors governing people’s behavioural intentions to use or reject recycled water in schemes where the water’s use involves close personal contact.

In this stage of the research program, Managed Aquifer Recharge (MAR) is explored for indirect potable reuse. Initial investigations into the scientific and community requirements of MAR are underway and is the focus of a major, multi-disciplinary study being funded under the Western Australian Premier’s Water Foundation. The work reported here is one work-package in the investigation.

A pre-refined predictive behavioural model, incorporating a range of psycho-sociological variables, is tested. The variables in the model were hypothesised to have significant influence over people’s decisions to act favourably or otherwise towards recycled water schemes. A scenario outlining a MAR scheme for indirect potable reuse in metropolitan Perth, Western Australia, was administered to 500 randomly selected Perth householders.

The survey found that, while over half of respondents intended to support a MAR scheme in Perth, a large proportion were not forming strong convictions about the scheme, expressing moderate and qualified responses in relation to intended behaviour towards the scheme. Roughly one-quarter of respondents gave responses that indicated refusal to support the scheme. While there were no differences based on education levels, income levels, family unit and age, males’ behavioural intentions toward the scheme were significantly more positive than females.

The results of structural equation modelling replicated the major findings of a preliminary study. Despite the inclusion of additional variables, it was again emotion and subjective norm that were found to have the strongest direct influence on intended behaviour. Fairness, trust, and perceived health and system risks also had significant influences. Knowledge once again failed to contribute significantly to the prediction of intended behaviour. The model was found to be extremely strong in its predictive power, able to account for 82% of the variance in intended behaviour.

The importance of risk became more apparent when it was modelled in isolation, accounting for 69% of the total variance in intended behaviour. Of the three types of risk investigated, risk to human health had the most bearing on people’s intentions toward the scheme. The strong influence of risk here may be somewhat surprising considering its role in the overall model, but correlations between risk, trust and variables like emotion and subjective norm suggest that its direct influences on intended behaviour are belied by its strong relationships with the other variables. That is, much of the influence of something like environmental risk on intended behaviour is accounted for by other variables.

The results from this phase of the research program support the notion that a model such as the one presented here can act as a useful tool for decision-making agencies to identify the key factors in their communities that are likely to influence their support or otherwise of proposed recycled water schemes and their relative importance in determining decisions.
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1. Introduction

In recent years, different states in Australia have established targets to increase their use of treated wastewater. For example, in Perth the State Government aims to reuse 20% of its wastewater by 2012. In Melbourne, the target is set at 20% by 2010. Reusing wastewater that would otherwise be discharged to an outfall has now become an integral part of policy for Australia’s water resource management. One reuse scheme under consideration involves the infiltration of treated wastewater into a drinking water aquifer. This reuse method, commonly known as Managed Aquifer Recharge (MAR), is considered by the Water Corporation of Western Australia to have major potential to secure Perth drinking water supplies into the future. It is thought that MAR could also assist in maintaining the environmental sustainability of the aquifer Perth relies on for much of its drinking water supply. The technical viability of using MAR in Perth is currently being explored and discussed within the scientific and wider communities. Trials involving MAR for both non-potable and indirect potable uses are increasingly occurring in Perth and regional areas. Initial investigation into the requirements of MAR is already underway, and this is the focus of a major, multi-disciplinary study being funded under the Western Australian Premier’s Water Foundation. The work reported here is one aspect of the investigation.

While advancements in treatment processes have broadened the range of potential uses and sources of recycled water, the successful implementation of any reuse scheme hinges on public acceptance. As an option for responsible water resource management, water reuse is widely promoted by the Australian community. Research nation-wide and separately in different states has generally found people to be accepting of water reuse as a concept (eg. Melbourne Water, 1998; Sydney Water, 1999; Water Corporation, 2003; Kaercher, Po & Nancarrow, 2003; Marks, Martin and Zadoroznyi, 2006). However, reactions from people when it comes to actually using the water are frequently quite different, as has been shown in the recent referendum in Toowoomba. Water recycling is seen to be a logical and necessary inclusion in the range of water resource management options, but communities frequently feel a reluctance to personally use the water. Little is known of how people make their decisions to accept different water recycling schemes for a range of different uses. What is apparent is that many technically sound reuse schemes around the world have failed because communities have rejected them, often at the eleventh hour (Po, Kaercher & Nancarrow, 2004).

Worldwide, there has been little in the way of systematic programs of social investigation to identify the factors that might influence public perceptions or mediate their decision-making. This report describes the most recent work in an ongoing research program that has been designed to systematically investigate the major factors governing people’s behavioural intentions to use or reject recycled water in schemes where the water’s use involves close personal contact (eg. drinking, bathing, food preparation). A model with the power to predict intended behaviour – rather than just to provide a description of specific attitudes and perceptions at particular points in time – could be used by planners and utilities to identify which factors are most likely to influence intended behaviour in individual communities. With this more specific information, they could then systematically target these concerns and plan to address them in their efforts to gain community support for water recycling and its successful implementation.

Previous work has included reviews of literature conducted to identify factors that might have significant influence on people’s acceptance and behaviour in relation to recycling schemes. These revealed little specifically relating to the recycling of water (Po, Kaercher & Nancarrow, 2004; Po & Nancarrow, 2004). There are, however, a number of theories of behavioural intention that have been used effectively to predict behaviour in a wide variety of contexts, among the most notable of which is Ajzen’s Theory of Planned Behaviour (Ajzen, 1985). Parallel literatures in fields such as food technology and risk management provided further insights (Syme and Nancarrow, 2006). Based on what was known about community preferences in relation to water supply systems and the outcomes of the literature review...
process, the following intended behaviour model (Figure 1) was constructed (see Po et al, 2005).

![Intended Behaviour Model Diagram]

**Figure 1. Original hypothesised model of intended behaviour**

Table 1 below summarises the variables in this hypothesised model.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotion</td>
<td>The extent to which a person feels negative or positive emotions towards the recycled water scheme</td>
</tr>
<tr>
<td>Attitudes</td>
<td>The extent to which a person believes that supporting the recycled water scheme will deliver positive outcomes</td>
</tr>
<tr>
<td>Subjective Norms</td>
<td>The amount of pressure and influence a person feels from other people to support the recycled water scheme</td>
</tr>
<tr>
<td>Risk Perceptions</td>
<td>The level of risk a person perceives as associated with the recycled water scheme</td>
</tr>
<tr>
<td>Perceived Control</td>
<td>The amount of control a person feels they have over the source and quality of their water</td>
</tr>
<tr>
<td>Knowledge</td>
<td>The level of knowledge a person feels they have about water issues and the use of recycled water for supply schemes</td>
</tr>
<tr>
<td>Trust</td>
<td>The extent to which a person trusts the authorities involved in implementing and managing the recycled water scheme</td>
</tr>
<tr>
<td>Responsibility</td>
<td>The extent to which a person rates the relative responsibility of the individual, the community and the authorities for making sure there is enough water for the future</td>
</tr>
<tr>
<td>Environmental Obligation</td>
<td>The extent to which a person feels personally obligated to protect the environment</td>
</tr>
<tr>
<td>Intended Behaviour</td>
<td>The intention to behave in a way that supports or protests the recycled water scheme (eg. the intention to drink the water; the intention to complain to authorities)</td>
</tr>
</tbody>
</table>
1.1. Preliminary Testing

Preliminary testing of the hypothesised model (Figure 1) was undertaken using two case studies describing two different recycled water schemes in Australia. The first case study was concerned with the newly established horticultural irrigation scheme at Werribee in Melbourne, where wastewater is being recycled and used to irrigate a variety of food crops. The second concerned a hypothetical indirect potable reuse scheme using MAR in Perth. Structural equation modelling was used to explore how well the collected data fit with the hypothesised model. The results are shown in Figure 2.

The model accounted for 85% of the variance of Intended Behaviour for the Werribee irrigation case study, and 89% of the variance in Intended Behaviour for the MAR case study. The model supported the inclusion of most of the hypothesised variables and their causal relationships, and suggested a number of additional relationships.

Knowledge and Responsibility, however, failed to contribute significantly to the prediction of Intended Behaviour, and Environmental Obligation was only a significant (but weak) contributor in the Werribee model. Perceived Control was weaker than anticipated, as was Risk.

Attitudes played a more central role than hypothesised. In this model, the other variables only indirectly predicted Intended Behaviour, requiring Attitudes as a mediating variable.

For a detailed discussion of the model’s preliminary testing, see Po et al. (2005).

Figure 2. Model after preliminary stage analysis
1.2. The Current Study

The study described here aimed to further test and refine the model in Figure 2. Preliminary stage analyses suggested that several variable measures needed further development before inclusion in this current stage of the research program. Also, concurrent research prompted the addition of further variables.

In earlier testing of the model, Attitudes became the mediating variable that all other independent variables flowed through, as was shown in Figure 2. The variable became the focal point of the independent variables in that earlier model and clearly required particular investigation in terms of what was actually being measured. Overall, the model refinements that were investigated in this work were as follows:

- the link between Attitudes and Behaviour;
- the separation of Risk into three distinct variables;
- the inclusion of Fairness and equity principles;
- the specificity of the Environmental Obligation measure; and
- the inclusion of an Actual Knowledge measure

Attitudes and Behaviour

As previously discussed, Attitudes was the only variable to have a significant direct relationship with Intended Behaviour. A re-examination of the measurements revealed close conceptual and semantic similarities between the Attitudes variables and Intended Behaviour. Their high correlation and ability to together form a single, reliable scale implied that, in effect, Attitudes was acting as a second measure of Intended Behaviour. Therefore, for subsequent testing, Attitudes was reworked to measure the belief a person had that the recycled water scheme would result in certain stated outcomes, and how important each of these outcomes was to the person. This falls more closely in line with Ajzen’s measure of Attitudes in the widely used Theory of Planned Behaviour (Ajzen, 1985). However, the Attitudes as measures of intended behaviour were retained and refined to strengthen the behavioural measure.

Risk

The unexpected weakness of Risk in the preliminary stage of testing prompted a review of the original questionnaire items. Previous studies have shown that there is more than one facet to risk that is important to people (eg, personal risk and risk to a sustainable water supply) and that while the same person may perceive one facet of risk as being great, they may find the other elements of risk ‘acceptable’ (see Po, et al., 2005). As the items in the preliminary investigation provided only a general measure of risk, it was felt that it should be improved to better capture the relevant risk typology. Accordingly, this investigation suggested three types of Risk: Health Risk (the risk to a person’s health posed by the recycled water scheme, measured by a number of attitudinal statements); Environmental Risk (the risk to the receiving aquifer posed by the recycled water scheme, also measured by a number of attitudinal statements); and System Risk (the risk of something going wrong with recycled water scheme processes, measured by perceived likelihood of system failure, perceived seriousness of a system incident, and perceived level of authorities’ control over system failure).

Fairness

Concurrent research into the prediction of community acceptance of potential water supply systems (Leviston, Porter & Nancarrow, 2006) suggested that principles of fairness and equity are significant to people’s decision-making. Aspects of the preliminary reuse investigations also suggested the possible inclusion of fairness in decisions. To investigate its possible role in informing Intended Behaviour, a Fairness scale measuring respondents’
judgement of how fair the scheme was (both overall and to a number of key user-groups) was included in the questionnaire.

Environmental Obligation and Groundwater values
While Environmental Obligation only figured weakly in the preliminary testing, it was decided that it should be retained in some form for the current stage. The environmental psychology literature suggests that environmental obligation and behaviour are most attuned to each other if the environmental attitude is specific to the behaviour under investigation (eg. Ajzen & Fishbein, 1980; Oskamp et al., 1991). With this in mind, the Environmental Obligation measures were adapted to relate to attitudes concerning the protection and sustainability of groundwater specifically. A number of attitudinal statements measuring people’s intrinsic valuation of groundwater and the importance of its protection were included in the final questionnaire.

Knowledge
In the preliminary stage of testing, respondents were asked to rate their level of knowledge and awareness of water issues. Knowledge failed to make a significant contribution to Intended Behaviour. For this stage, the measure was extended to encompass actual knowledge as well as self-reported knowledge to avoid any self-reporting bias from respondents. This actual knowledge component asked respondents to provide examples of sources and uses of recycled wastewater in Australia. To prevent respondents being prompted by the questionnaire content, these questions were asked prior to giving any information about the MAR scheme under investigation.

Given all of the above, the resulting hypothetical model under investigation for this stage of the research appears as Figure 3.

Table 2 summarises the variables in this hypothesised model. Variables that are ‘greyed out’ in the table represent those variables that remained unchanged from the previous stage of testing.
Table 2. Descriptions of the variables in the hypothesised model

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotion</td>
<td>The extent to which a person feels negative or positive emotions towards the recycled water scheme</td>
</tr>
<tr>
<td>Attitudes</td>
<td>The level of agreement a person has that the recycled water scheme will result in certain positive outcomes, and how important each of these outcomes was to the person.</td>
</tr>
<tr>
<td>Subjective Norms</td>
<td>The amount of pressure and influence a person feels from other people to support the recycled water scheme</td>
</tr>
<tr>
<td>Trust</td>
<td>The extent to which a person trusts the authorities involved in implementing and managing the recycled water scheme</td>
</tr>
<tr>
<td>Health Risk Perceptions</td>
<td>The level of risk to human health a person perceives as posed by the recycled water scheme</td>
</tr>
<tr>
<td>System Risk Perceptions</td>
<td>The perceived likelihood a person has that something will go wrong with the recycled water scheme, the perceived seriousness of system failure, and how much control they perceive authorities having over system failure</td>
</tr>
<tr>
<td>Environmental Risk Perceptions</td>
<td>The level of risk to the health of the receiving aquifer a person perceives as posed by the recycled water scheme</td>
</tr>
<tr>
<td>Perceived Control</td>
<td>The amount of control a person feels they have over the source and quality of their water</td>
</tr>
<tr>
<td>Knowledge</td>
<td>The level of self-reported and actual knowledge a person has about water issues and the use of recycled water for supply schemes</td>
</tr>
<tr>
<td>Fairness</td>
<td>The person’s evaluation of whether the recycled water scheme is fair, both overall and to a variety of users</td>
</tr>
<tr>
<td>Groundwater Values</td>
<td>The level of importance a person places on the protection of groundwater and their intrinsic valuation of groundwater</td>
</tr>
<tr>
<td>Intended Behaviour</td>
<td>The intention to behave in a way that supports or protests the recycled water scheme (e.g., the intention to drink the water; the intention to complain to authorities)</td>
</tr>
</tbody>
</table>

Once again, the scenario used to test the hypothesised model was a Perth-based MAR scheme where treated wastewater is infiltrated into underground aquifers and later extracted as part of Perth’s regular drinking water supply. Testing the model a second time with an MAR scenario also provided an opportunity to test the model for replication.

The objectives of the current stage of testing can be summarised as follows:

- to establish general community attitudes and behavioural intention towards a Managed Aquifer Recharge scheme in Perth;
- to test the consistency of this model on intended behaviour as it relates to a Managed Aquifer Recharge scheme in Perth, and recycled water schemes in general;
- to determine how much variance in behavioural intention can be explained by the model;
- to identify key psychological variables that influence intended behaviour;
• to explore the role that different aspects of risk play in people’s intended behaviour; and
• to explore the role that fairness and equity principles play in people’s intended behaviour.
2. Methodology
The model shown in Figure 3 was tested by administering a verbal questionnaire in response to a likely MAR scheme for metropolitan Perth. A community telephone survey was conducted to collect data from 500 householders – the minimum sample size required to use structural equation modelling on the model under investigation.

Respondents were given an overview of the MAR scheme (Table 3) that included the source of the water, the treatment processes involved and who would be responsible for the management of the scheme. Interviewers were provided with additional information to assist with any questions the respondents may have asked (Appendix 1).

Table 3. Managed Aquifer Recharge scenario presented to respondents

Western Australia has experienced a significant reduction in rainfall since the mid 1970s and this is likely to continue with the onset of climate change. With the increasing population, there is a need to plan for our future water supplies. At the moment, more than half of Perth’s water comes from groundwater supplies. It is possible that fresh water supplies that are available for Perth could start to run out in less than 30 years unless we do things differently.

Therefore, a variety of new water supply options are being considered, including reusing our wastewater, which includes water from the toilet. One method of doing this could involve treating the wastewater from households and industry to the highest standard available to remove solids, oils and greases, detergents, nutrients, heavy metals and bacterias, and then storing the water in the groundwater aquifers. There it would mix with normal groundwater and some years later be taken out for household use, including for drinking.

Science is now finding that the aquifer further treats the remaining nutrients, chemicals and pathogens in the treated wastewater. The mixed water would be pumped from the aquifer, treated the same as drinking water is now and then piped to households.

The Water Corporation would be responsible for all treatment processes, the storage in the aquifers and the pumping and piping to households. The Department of Health would ensure the standards of treatment are suitable for drinking, and the Department of Environment would monitor the aquifers and oversee any environmental issues. Anyone who was concerned about the water supply could provide their own water, by using a rainwater tank, buying bottled water and so on.

We would now like to know what your thoughts would be if the government was to introduce this reuse scheme for all your household uses, including for drinking.
2.1. Study Area and Respondents

Suburbs in the Perth metropolitan area were stratified socio-economically (into lower, medium and higher socio-economic groups) based on average weekly family income figures.¹ Thirteen suburbs were then randomly selected from each of the lower and higher socio-economic groups and 24 suburbs were selected from the medium socio-economic group.

Table 4 lists the suburbs selected for each city under their corresponding socio-economic group.

<table>
<thead>
<tr>
<th>Lower Socio-Economic</th>
<th>Medium Socio-Economic</th>
<th>Higher Socio-Economic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balga</td>
<td>Ardross</td>
<td>Mount Hawthorn</td>
</tr>
<tr>
<td>Belmont</td>
<td>Beechboro</td>
<td>Mount Lawley</td>
</tr>
<tr>
<td>Bentley</td>
<td>Beldon</td>
<td>Munster</td>
</tr>
<tr>
<td>Girrawheen</td>
<td>Bicton</td>
<td>North Beach</td>
</tr>
<tr>
<td>Karawara</td>
<td>Carlisle</td>
<td>Riverton</td>
</tr>
<tr>
<td>Koongamia</td>
<td>Caversham</td>
<td>Shenton Park</td>
</tr>
<tr>
<td>Lockridge</td>
<td>Churchlands</td>
<td>Spearwood</td>
</tr>
<tr>
<td>Madeley</td>
<td>East Victoria Park</td>
<td>Subiaco</td>
</tr>
<tr>
<td>Maylands</td>
<td>Joondalup</td>
<td>Thornlie</td>
</tr>
<tr>
<td>Midvale</td>
<td>Kalamunda</td>
<td>Westfield</td>
</tr>
<tr>
<td>Osborne Park</td>
<td>Kiara</td>
<td>Yangebup</td>
</tr>
<tr>
<td>Westminster</td>
<td>Mahogany Creek</td>
<td>Yokine</td>
</tr>
<tr>
<td>Willagee</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Respondents were randomly selected from the suburbs listed above. A sample of ten respondents aged eighteen years or older from separate households was required from each suburb. An effort was made to recruit an equal number of males and females. Interviewers were instructed to call each household a minimum of five times (at different times of the day and on different days) before they could dismiss it as a “no contact” household. A total of 500 respondents were surveyed. Table 5 provides a summary of respondent composition.

<table>
<thead>
<tr>
<th></th>
<th>Male</th>
<th>Female</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower</td>
<td>70</td>
<td>60</td>
<td>130</td>
</tr>
<tr>
<td>Medium</td>
<td>120</td>
<td>120</td>
<td>240</td>
</tr>
<tr>
<td>Higher</td>
<td>58</td>
<td>72</td>
<td>130</td>
</tr>
<tr>
<td>TOTAL</td>
<td>248</td>
<td>252</td>
<td>500</td>
</tr>
</tbody>
</table>

¹ Source: Australian Bureau of Statistics, 2001 Census
2.2. Refusal Rates

The refusal rate for the questionnaire was 61.3% which is somewhat lower than other recent surveys. The table below provides a summary of refusals.

<table>
<thead>
<tr>
<th>Reason</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Interested</td>
<td>312</td>
</tr>
<tr>
<td>Too Busy</td>
<td>284</td>
</tr>
<tr>
<td>Limited English</td>
<td>76</td>
</tr>
<tr>
<td>Hung Up</td>
<td>51</td>
</tr>
<tr>
<td>Elderly</td>
<td>50</td>
</tr>
<tr>
<td>Unwell</td>
<td>35</td>
</tr>
<tr>
<td>Aborted</td>
<td>8</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>816</strong></td>
</tr>
</tbody>
</table>

Table 6. Refusal details
3. Results

Examination of the variables was undertaken using correlation analysis, analysis of variance (ANOVA), factor analysis and reliability analysis. This was followed by an investigation of the causal relationships between the components of the model using structural equation modelling.

3.1. Preliminary Analysis

For the preliminary analysis, a significance level of $p<.01$ was applied. Differences referred to as “significant” denote statistical significance at this level. The number of valid responses to a question is signified by “n” and/or as a percentage of the whole sample.

3.1.1. Knowledge and Awareness

Respondents were initially asked a series of general questions about water issues and wastewater. Firstly, they were asked to rate their awareness of water issues in Perth. Their responses are shown in Table 7 below.

<table>
<thead>
<tr>
<th>Option</th>
<th>n (500)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - Not at all aware</td>
<td>7</td>
<td>1.4</td>
</tr>
<tr>
<td>2</td>
<td>26</td>
<td>5.2</td>
</tr>
<tr>
<td>3 - Somewhat aware</td>
<td>167</td>
<td>33.4</td>
</tr>
<tr>
<td>4</td>
<td>90</td>
<td>18.0</td>
</tr>
<tr>
<td>5 - Very aware</td>
<td>210</td>
<td>42.0</td>
</tr>
</tbody>
</table>

*Mean = 3.94*

Almost half of all respondents thought that they were *very aware* of water issues in Perth (42.0%). Less than two percent of respondents stated they were *not at all aware* (1.4%). In total, 93.4% of respondents believed that they were *somewhat aware* to *very aware* of water issues in Perth.

Respondents were then asked to rate how much knowledge they had about reusing wastewater. Responses are shown in Table 8.

In contrast with awareness, very few respondents rated themselves as having a *high level of knowledge* about reusing wastewater (8.8%). Almost half of all respondents (48.2%) thought that they had *some knowledge* about it, with 13.4% claiming to have *no knowledge at all*.

Respondents were asked where they thought wastewater came from. The most common response was that wastewater comes from *laundries* (68.4%) followed by *bathrooms* (61.0%) and *kitchens* (59.8%). A full list of responses can be seen in Appendix 2.
Table 8. Knowledge about reusing wastewater

<table>
<thead>
<tr>
<th>Option</th>
<th>n (500)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 – No knowledge at all</td>
<td>67</td>
<td>13.4</td>
</tr>
<tr>
<td>2</td>
<td>86</td>
<td>17.2</td>
</tr>
<tr>
<td>3 – Some knowledge</td>
<td>241</td>
<td>48.2</td>
</tr>
<tr>
<td>4</td>
<td>62</td>
<td>12.4</td>
</tr>
<tr>
<td>5 – High level of knowledge</td>
<td>44</td>
<td>8.8</td>
</tr>
</tbody>
</table>

Mean = 2.86

When asked if there was anything for which recycled wastewater was currently being used in Australia, the most common response was to water household lawns and gardens in various parts of Australia (38.6%) and to water some parks and reserves (19.4%). A full list of responses can be found in Appendix 3.

3.1.2. Intended Behaviour

Having been described the MAR recycled water scheme scenario, respondents were asked whether they would be prepared to drink water from such a scheme.

About two-thirds of respondents said that they would drink the water provided by the scheme (60.0%), while 17.2% said they were not sure. Almost one-quarter of respondents (22.8%) said that they would not drink the water provided by this scheme. This compares with 17.8% of respondents who stated they would not drink water from the same MAR scheme in the preliminary stage of our research (Po et al., 2005).

In interpreting the yes support for the system it should be noted that a number of these responses were obviously qualified as was evidenced in later unprompted comments. This was similar to responses in Po et al., (2005), where the reported yes responses were only those that were unqualified. Similar response qualifications have also occurred in other studies (eg. Marks et al., 2006), thus indicating caution in accepting stated community support for the schemes at face value.

As discussed in Section 1.2, attitudes toward the behaviour were also used in this study as an additional measure of the behaviour. Overall support for the water supply system and drinking the water was indicated through responses to a number of statements regarding behavioural intentions toward it. Respondents replied to each statement on a 6-point scale ranging from 1 (strongly disagree) to 6 (strongly agree). A 6-point scale was used deliberately to disallow people to “sit on the fence”, by forcing agree or disagree responses. It also provided people with an ability to qualify their positive or negative intentions through the use of the scale rather than a yes, no, unsure judgement. Responses are detailed in Table 9.

Just under two-thirds of respondents either somewhat agreed (22.2%), agreed (28.1%) or strongly agreed (14.0%) with the statement ‘I support adding recycled wastewater to our underground drinking water supplies’.
Two-thirds of respondents (66.6%) agreed that they *would drink the water that was provided by this scheme*, while 60.8% of respondents disagreed with the statement ‘I *do not want recycled water to be mixed with my drinking water*. The frequencies for these statements suggest that the majority of those who initially gave an *unsure* judgement (when asked whether they would be prepared to drink water from such a scheme) will choose negatively with regards to the scheme if forced to make an agree/disagree decision.

Almost three-quarters of respondents disagreed with the statement ‘I *would protest against recycled wastewater being added to drinking water*’ (74.9%). Similarly, the majority (71.6%) of respondents stated that they would not ‘*complain to the water authority if recycled wastewater was added to underground drinking water supplies*’.

More respondents agreed (56.4%) with the statement ‘*given the choice I would not drink recycled wastewater*’ than disagreed (43.6%).

<table>
<thead>
<tr>
<th>Table 9. Behavioural intention statements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Statement</td>
</tr>
<tr>
<td>------------------------------------------</td>
</tr>
<tr>
<td>I support adding recycled wastewater to our underground water supply (n=499)</td>
</tr>
<tr>
<td>I would drink the water provided by this reuse scheme (n=500)</td>
</tr>
<tr>
<td>Given the choice, I would not drink water that contained recycled wastewater (n=500)</td>
</tr>
<tr>
<td>I do not want recycled wastewater to be mixed with my drinking water (n=500)</td>
</tr>
<tr>
<td>I would complain to the water authority about my water supply if recycled wastewater was added to our underground drinking water (n=500)</td>
</tr>
<tr>
<td>I would protest against recycled wastewater being added to my drinking water (n=499)</td>
</tr>
</tbody>
</table>

Examination of the mean responses to the intended behaviour items indicated that respondents generally supported adding recycled wastewater to underground water supplies; were generally prepared to drink water from the scheme; and would not protest or complain...
to authorities about drinking water from the scheme (Figure 4). Respondents did, however, express that overall they would prefer not to drink water from the scheme given a choice.

Figure 4. Mean responses to behavioural intention statements

3.1.3. Emotion

A number of questions were asked to provide a measurement of emotion (i.e. ‘the yuck factor’). Overall, respondents seemed to have a mildly negative emotive response to the system. However, of interest was the evidence that almost 20% of respondents indicated a strong negative emotion when considering the scheme.
3.1.4. Trust

Respondents were asked how much trust they had in the Health Department, the Department of Environment, the Water Corporation, and scientists, in regards to responsibly ensuring the health and safety of the recycled water scheme, responding on a 5-point scale ranging from 1 (no trust at all) to 5 (complete trust).

Table 11. Levels of trust in different agencies to responsibly manage the scheme

<table>
<thead>
<tr>
<th></th>
<th>1 No trust at all (%)</th>
<th>2</th>
<th>3 Some trust (%)</th>
<th>4</th>
<th>5 Complete trust (%)</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scientists (n=499)</td>
<td>6.8</td>
<td>7.0</td>
<td>22.4</td>
<td>34.5</td>
<td>29.3</td>
<td>3.72</td>
</tr>
<tr>
<td>Department of Environment (n=500)</td>
<td>9.8</td>
<td>12.0</td>
<td>28.6</td>
<td>30.6</td>
<td>19.0</td>
<td>3.37</td>
</tr>
<tr>
<td>Health Department (n=500)</td>
<td>12.2</td>
<td>10.6</td>
<td>33.2</td>
<td>25.8</td>
<td>18.2</td>
<td>3.27</td>
</tr>
<tr>
<td>Water Corporation (n=500)</td>
<td>12.4</td>
<td>15.0</td>
<td>33.6</td>
<td>25.2</td>
<td>13.8</td>
<td>3.13</td>
</tr>
</tbody>
</table>

Over three-quarters of respondents had at least some degree of trust in the Health Department (77.2%) to ensure the health and safety of drinking water from the scheme, the Department of Environment (78.2%) to ensure that the scheme was safe for the environment and scientists (86.2%) to produce safe drinking water. Just under three-quarters of respondents (72.6%) had some level of trust in the Water Corporation to responsibly manage and monitor the scheme.

Figure 5. Mean trust in agencies to responsibly manage the scheme
Mean ratings indicated that, overall, respondents had some trust in each of the agencies. People had significantly more trust in scientists than the other agencies, and significantly less trust in the Water Corporation than the other agencies. This is consistent with Po et al. (2005).

Respondents were also asked how much they would trust information from various agencies, responding on a 5-point scale ranging from 1 (no trust at all) to 5 (complete trust). Details are listed in Table 12.

More than three-quarters of respondents said that they would have at least some degree of trust in the Department of Environment (83.2%), the Water Corporation (75.6%), Universities (89.4%), the Health Department (82.6%), environmental groups (79.8%), consumer groups (79.0%), and medical doctors (81.8%) to provide reliable information on issues associated with adding recycled wastewater to underground water supplies.

More than half the respondents did not trust information provided by private companies (57.4%), while the vast majority of respondents trusted the CSIRO to provide reliable information on issues associated with adding recycled wastewater to underground water supplies (92.0%).

| Table 12. Level of trust in agencies to provide reliable information about issues associated with the recycled water scheme |
|---------------------------------------------------------------|---|---|---|---|---|
| (n=500) | 1 No trust at all (%) | 2 (%) | 3 Some trust (%) | 4 (%) | 5 Complete trust (%) | Mean |
| CSIRO | 2.2 | 5.8 | 22.6 | 37.4 | 32.0 | 3.91 |
| Universities | 2.8 | 7.8 | 30.8 | 38.2 | 20.4 | 3.66 |
| Department of Environment | 8.4 | 8.4 | 35.4 | 31.8 | 16.0 | 3.39 |
| Health Department | 7.8 | 9.6 | 35.2 | 33.0 | 14.4 | 3.37 |
| Environmental groups | 6.0 | 14.2 | 35.6 | 27.8 | 16.4 | 3.34 |
| Consumer groups | 6.4 | 13.8 | 35.6 | 28.6 | 15.6 | 3.33 |
| Water Corporation | 10.6 | 13.8 | 33.2 | 29.2 | 13.2 | 3.21 |
| Private companies | 24.0 | 33.4 | 29.4 | 11.8 | 1.4 | 2.33 |

Referring to respondents’ mean ratings, there was generally some degree of trust in the Department of Environment, the Water Corporation, universities, the Health Department, environmental groups, the CSIRO, consumer groups and medical doctors (see Figure 6).
Trust in the information provided by CSIRO, Universities and Medical Doctors was rated significantly higher than trust in the other agencies, with trust in the CSIRO significantly higher than Universities and Medical Doctors, while trust in information provided by Private Companies was rated significantly lower than any other agency.

Respondents were asked to indicate how much trust they had in authorities to ensure water quality, water safety and responsible water management. Details are listed in Table 13.

<table>
<thead>
<tr>
<th>Statement</th>
<th>1 Strongly disagree (%)</th>
<th>2 Disagree (%)</th>
<th>3 Neither (%)</th>
<th>4 Agree (%)</th>
<th>5 Strongly agree (%)</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have complete trust in the authorities to ensure I have good quality water (n=500)</td>
<td>11.8</td>
<td>20.2</td>
<td>21.2</td>
<td>40.8</td>
<td>6.0</td>
<td>3.09</td>
</tr>
<tr>
<td>I would have complete trust in any information about the safety of our water given to me by the various authorities (n=500)</td>
<td>9.6</td>
<td>24.6</td>
<td>23.2</td>
<td>37.8</td>
<td>4.8</td>
<td>3.04</td>
</tr>
<tr>
<td>I have complete trust in the authorities to manage our water responsibly (n=500)</td>
<td>10.4</td>
<td>25.2</td>
<td>22.2</td>
<td>36.4</td>
<td>5.8</td>
<td>3.02</td>
</tr>
</tbody>
</table>

Less than half of all respondents either agreed or strongly agreed that they had complete trust in the authorities to ensure good quality water (46.8%), to provide information about the safety of water (42.6%), and to manage water responsibly (42.2%). However, it should be
remembered that these questions asked about “authorities” in general, where the previous trust questions provided details of individual organisations.

### 3.1.5. Fairness

Respondents were asked to rate the fairness of the recycled water scheme for a number of different potential users and overall, responding on a scale from 1 (unfair) through to 4 (fair). Details are listed in Table 14.

<table>
<thead>
<tr>
<th>Table 14. Fairness of the recycled water scheme to a variety of users</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td>Households on high income (n=494)</td>
</tr>
<tr>
<td>The Perth environment (n=492)</td>
</tr>
<tr>
<td>Households with no children (n=494)</td>
</tr>
<tr>
<td>Households with children (n=495)</td>
</tr>
<tr>
<td>Households on low income (n=495)</td>
</tr>
<tr>
<td>The underground aquifer (n=487)</td>
</tr>
<tr>
<td>Overall, for Perth (n=498)</td>
</tr>
</tbody>
</table>

Half of all respondents thought that the recycled water scheme was fair to ‘households with no children’ (51.8%) and ‘the Perth environment’ (50.2%), while a majority thought it fair to ‘households on high income’ (60.7%). Almost half of the respondents thought that the recycled water scheme was fair to ‘households with children’ (46.9%) and ‘households on low income’ (46.7%) while 38.4% of respondents believed the scheme was fair to the ‘underground aquifer’.

The scheme was rated as significantly fairer to those on high income than to those on low income, and as significantly fairer to households with no children than to households with children.

When thinking about fairness overall, about two-thirds of the respondents thought that the scheme was fair (68.5%).
3.1.6. Perceived Personal Control

Respondents rated five statements relating to personal control, on a 5-point scale from 1 (strongly disagree) through to 5 (strongly agree). Details are listed in Table 15.

Table 15. Frequencies and means for Perceived Personal Control items

<table>
<thead>
<tr>
<th>Statement</th>
<th>1 Strongly disagree (%)</th>
<th>2 Disagree (%)</th>
<th>3 Neither (%)</th>
<th>4 Agree (%)</th>
<th>5 Strongly agree (%)</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have little say in where the water I drink comes from</td>
<td>4.4</td>
<td>13.4</td>
<td>9.4</td>
<td>56.6</td>
<td>16.2</td>
<td>3.67</td>
</tr>
<tr>
<td>(n=500)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>If I don’t like my tap water, I can buy bottled water instead</td>
<td>4.6</td>
<td>18.2</td>
<td>12.6</td>
<td>52.8</td>
<td>11.8</td>
<td>3.49</td>
</tr>
<tr>
<td>(n=500)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>It would be easy for me to improve the quality of the water that comes</td>
<td>3.6</td>
<td>26.0</td>
<td>11.2</td>
<td>52.4</td>
<td>6.8</td>
<td>3.33</td>
</tr>
<tr>
<td>out of my tap</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(n=500)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I can’t afford to buy bottled water for drinking</td>
<td>8.4</td>
<td>38.0</td>
<td>17.8</td>
<td>28.4</td>
<td>7.4</td>
<td>2.88</td>
</tr>
<tr>
<td>(n=500)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I have complete control over the quality of water I drink</td>
<td>11.4</td>
<td>43.2</td>
<td>10.2</td>
<td>28.6</td>
<td>6.6</td>
<td>2.76</td>
</tr>
<tr>
<td>(n=500)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Almost three-quarters of all respondents either agreed (56.6%) or strongly agreed (16.2%) with the statement ‘I have little say in where the water I drink comes from’.

Respondents generally felt that they could buy bottled water if they weren’t happy with their tap water, with over two thirds of respondents agreeing (52.8%) or strongly agreeing (11.8%) with the statement ‘if I don’t like my tap water I can buy bottled water’ and nearly half of the respondents either disagreed (38.0%) or strongly disagree (8.4%) with the statement ‘I can’t afford to buy bottled water’. However, almost one-fifth of people were unsure about this statement.

There was a feeling that respondents could influence the quality of their tap water, with over half of the respondents agreeing (52.4%) or strongly agreeing (6.8%) with the statement ‘it would be easy to change the quality of my tap water’. Respondents did not generally feel however, that they had complete control over the quality of drinking water, with more than half of all respondents disagreeing (43.2%) or strongly disagreeing (11.4%) with the statement ‘I have complete control over the quality of water I drink’.
3.1.7. Subjective Norm

Respondents rated four statements relating to subjective norm, on a 5-point scale from 1 (strongly disagree) through to 5 (strongly agree). Details are listed in Table 16.

Table 16. Frequencies and means for Subjective Norm items

<table>
<thead>
<tr>
<th>Statement</th>
<th>1 Strongly disagree (%)</th>
<th>2 Disagree (%)</th>
<th>3 Neither (%)</th>
<th>4 Agree (%)</th>
<th>5 Strongly agree (%)</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perth people would generally disagree with a reuse scheme that uses our drinking water aquifers (n=499)</td>
<td>1.5</td>
<td>17.1</td>
<td>27.7</td>
<td>46.5</td>
<td>7.2</td>
<td>3.41</td>
</tr>
<tr>
<td>Most of my family would not be happy to drink water mixed with recycled wastewater (n=500)</td>
<td>6.2</td>
<td>32.2</td>
<td>20.8</td>
<td>31.2</td>
<td>9.6</td>
<td>3.06</td>
</tr>
<tr>
<td>Those people close to me would support putting recycled wastewater in our drinking water aquifers (n=500)</td>
<td>9.0</td>
<td>28.0</td>
<td>29.2</td>
<td>28.4</td>
<td>5.4</td>
<td>2.93</td>
</tr>
<tr>
<td>I think most people in Perth would be happy to drink water that has been mixed with recycled wastewater (n=500)</td>
<td>10.8</td>
<td>40.8</td>
<td>25.8</td>
<td>20.6</td>
<td>2.0</td>
<td>2.62</td>
</tr>
</tbody>
</table>

Over half the respondents felt that people in Perth would not accept the reuse scheme, with 40.8% disagreeing, and 10.8% strongly disagreeing with the statement ‘most people in Perth would drink water mixed with recycled wastewater’ and 46.4% agreeing and 7.2% strongly agreeing that ‘Perth people would generally disagree with a reuse scheme that uses our drinking water aquifers’.

Responses about family and close friends were dispersed, with almost equal numbers of respondents agreeing (33.8%) and disagreeing (37.0%) to some degree with the statement ‘people close to me would support putting recycled wastewater in our drinking water aquifers’. Respondents equally agreed (40.8%) and disagreed (38.4%) with the statement ‘most of my family would not be happy to drink water mixed with recycled wastewater’.
3.1.8. Groundwater Values

Respondents' groundwater values were measured through responses to five statements, on a 5-point scale ranging from 1 (strongly disagree) to 5 (strongly agree). Details are listed in Table 17.

<table>
<thead>
<tr>
<th>Statement</th>
<th>1 Strongly disagree (%)</th>
<th>2 Disagree (%)</th>
<th>3 Neither (%)</th>
<th>4 Agree (%)</th>
<th>5 Strongly agree (%)</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>We need to protect our groundwater to avoid running out of water in the future (n=500)</td>
<td>0.8</td>
<td>5.4</td>
<td>9.2</td>
<td>58.4</td>
<td>26.2</td>
<td>4.04</td>
</tr>
<tr>
<td>To me, the protection of natural groundwater is vital (n=498)</td>
<td>0.4</td>
<td>8.9</td>
<td>12.4</td>
<td>54.8</td>
<td>23.5</td>
<td>3.92</td>
</tr>
<tr>
<td>I feel a moral obligation to protect natural and ancient groundwater (n=500)</td>
<td>2.4</td>
<td>17.8</td>
<td>16.2</td>
<td>48.0</td>
<td>15.6</td>
<td>3.57</td>
</tr>
<tr>
<td>In the end, the only value of protecting groundwater is in its use for human welfare (n=498)</td>
<td>10.8</td>
<td>31.7</td>
<td>18.8</td>
<td>33.3</td>
<td>5.4</td>
<td>2.91</td>
</tr>
<tr>
<td>Ancient groundwater should not be touched by humans (n=500)</td>
<td>7.8</td>
<td>42.8</td>
<td>23.8</td>
<td>20.1</td>
<td>5.5</td>
<td>2.73</td>
</tr>
</tbody>
</table>

More than three-quarters of respondents felt that protection of groundwater was very important, either agreeing (54.6%) or strongly agreeing (23.4%) with the statement 'to me, the protection of natural groundwater is vital'. More than half of the respondents agreed (58.4%), and over a quarter strongly agreed (26.2%) with the statement 'we need to protect our groundwater to avoid running out of water in the future'. Roughly equal numbers agreed (38.7%) and disagreed (42.5%) with the statement 'in the end, the only value in protecting groundwater is in its use for human welfare'. Respondents generally disagreed (50.6%) that 'ancient groundwater should not be touched by humans' and felt some 'moral obligation to protect natural and ancient groundwater'.
### 3.1.9. Risk

#### Environmental Risk

Respondents’ perceptions of environmental risk were measured through responses to five statements, on a 5-point scale ranging from 1 (strongly disagree) to 5 (strongly agree). Details are listed in Table 18.

<table>
<thead>
<tr>
<th>Statement</th>
<th>1 Strongly disagree (%)</th>
<th>2 Disagree (%)</th>
<th>3 Neither (%)</th>
<th>4 Agree (%)</th>
<th>5 Strongly agree (%)</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am happy for scientists to do trials on our drinking water aquifers</td>
<td>2.6</td>
<td>9.4</td>
<td>9.2</td>
<td>61.2</td>
<td>17.6</td>
<td>3.82</td>
</tr>
<tr>
<td>(n=500)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Our underground water supply is too fragile to risk tampering with it</td>
<td>4.2</td>
<td>29.3</td>
<td>25.8</td>
<td>31.5</td>
<td>9.2</td>
<td>3.12</td>
</tr>
<tr>
<td>(n=499)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Our underground water supply is too important to experiment with</td>
<td>4.0</td>
<td>34.8</td>
<td>22.2</td>
<td>29.6</td>
<td>9.4</td>
<td>3.06</td>
</tr>
<tr>
<td>(n=500)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adding recycled wastewater to our underground water supplies will not contaminate our water supply</td>
<td>6.8</td>
<td>28.0</td>
<td>30.0</td>
<td>31.6</td>
<td>3.6</td>
<td>2.97</td>
</tr>
<tr>
<td>(n=500)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>There is no risk to our underground water from adding recycled wastewater to it</td>
<td>9.7</td>
<td>28.6</td>
<td>32.8</td>
<td>25.8</td>
<td>3.1</td>
<td>2.84</td>
</tr>
<tr>
<td>(n=497)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

When thinking about the environmental risk of adding recycled wastewater to underground water supplies, responses were dispersed, with roughly equal numbers of respondents agreeing and disagreeing with the statements ‘adding recycled wastewater to our underground water supplies will not contaminate our water supply’ (agree = 35.2%, disagree = 34.8%), and ‘our underground water supply is too important to experiment with’ (agree = 39.0%, disagree = 38.8%).

Slightly more respondents felt that the ‘water supply is too fragile to tamper with’ (agree = 40.7%) and that there was some risk to underground water, disagreeing (42.5%) with the statement ‘there is no risk to our underground water from adding recycled wastewater to it’.

More than three-quarters of respondents were happy for scientists to conduct trials with underground water, either agreeing (61.2%) or strongly agreeing (17.6%) with the statement ‘I am happy for scientists to do trials on our drinking water aquifers’.
Health Risk

Respondents rated four statements relating to potential health risks associated with the recycled water scheme, on a 5-point scale from 1 (strongly disagree) through to 5 (strongly agree). Details are listed in Table 19.

<table>
<thead>
<tr>
<th>Statement</th>
<th>1 Strongly disagree (%)</th>
<th>2 Disagree (%)</th>
<th>3 Neither (%)</th>
<th>4 Agree (%)</th>
<th>5 Strongly agree (%)</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>There would be no health risk to me from drinking water from this scheme (n=499)</td>
<td>5.2</td>
<td>20.2</td>
<td>25.9</td>
<td>42.5</td>
<td>6.2</td>
<td>3.24</td>
</tr>
<tr>
<td>Drinking water from this scheme will not lead to health problems in the community (n=498)</td>
<td>5.2</td>
<td>35.7</td>
<td>32.4</td>
<td>22.7</td>
<td>4.0</td>
<td>3.15</td>
</tr>
<tr>
<td>This scheme poses a health risk to young children (n=500)</td>
<td>8.0</td>
<td>39.4</td>
<td>23.0</td>
<td>25.2</td>
<td>4.4</td>
<td>2.79</td>
</tr>
<tr>
<td>Drinking water from this scheme will pose a health risk to me (n=499)</td>
<td>11.7</td>
<td>41.5</td>
<td>21.2</td>
<td>21.0</td>
<td>4.6</td>
<td>2.66</td>
</tr>
</tbody>
</table>

Respondents generally indicated they did not believe the drinking water scheme posed a health risk to them, disagreeing (53.0%) to some degree with the statement ‘drinking water from this scheme will pose a health risk to me’ more often than agreeing (25.6%). Almost half the respondents also agreed with the statement ‘there would be no health risk to me from drinking water from this scheme’ (48.7%).

More respondents disagreed with the statement ‘drinking water from this scheme will not lead to health problems in the community’ than agreed (disagree = 40.9%, agree = 26.7%) indicating a perception of some health threat to the community.

Respondents generally disagreed (47.4%) with the statement ‘this scheme poses a health risk to young children’.

The high proportion of respondents who neither agreed nor disagreed with the statements should be noted.

System Risk

Respondents were asked three questions relating to potential system risks associated with the recycled water scheme, on 5-point scales from 1 (highly unlikely/extremely serious/no control at all) through to 5 (highly likely/not at all serious/high level of control).
Table 20. Perceived likelihood of something going wrong with the water supply system

<table>
<thead>
<tr>
<th>Option</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 – Highly Unlikely</td>
<td>45</td>
<td>9.0</td>
</tr>
<tr>
<td>2</td>
<td>76</td>
<td>15.2</td>
</tr>
<tr>
<td>3 – Neither likely nor unlikely</td>
<td>121</td>
<td>24.2</td>
</tr>
<tr>
<td>4</td>
<td>134</td>
<td>26.8</td>
</tr>
<tr>
<td>5 – Highly likely</td>
<td>124</td>
<td>24.8</td>
</tr>
</tbody>
</table>

Mean = 3.43

Just over half of the respondents thought it was likely (26.8%) or highly likely (24.8%) that 'something might go wrong with the operation of this water supply system'.

Table 21. Perceived seriousness of potential problems with the water supply system

<table>
<thead>
<tr>
<th>Option</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 – Extremely Serious</td>
<td>286</td>
<td>57.4</td>
</tr>
<tr>
<td>2</td>
<td>56</td>
<td>11.2</td>
</tr>
<tr>
<td>3 – Serious</td>
<td>120</td>
<td>24.1</td>
</tr>
<tr>
<td>4</td>
<td>21</td>
<td>4.2</td>
</tr>
<tr>
<td>5 – Not at all serious</td>
<td>15</td>
<td>3.1</td>
</tr>
</tbody>
</table>

Mean = 1.84

More than half the respondents (57.4%) felt that it would be extremely serious 'if something went wrong with this water supply system'.

Table 22. Perceived level of control that authorities would have over something going wrong

<table>
<thead>
<tr>
<th>Option</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 – No control at all</td>
<td>47</td>
<td>9.5</td>
</tr>
<tr>
<td>2</td>
<td>48</td>
<td>9.7</td>
</tr>
<tr>
<td>3 – Some control</td>
<td>183</td>
<td>36.8</td>
</tr>
<tr>
<td>4</td>
<td>62</td>
<td>12.5</td>
</tr>
<tr>
<td>5 – High level of control</td>
<td>157</td>
<td>31.5</td>
</tr>
</tbody>
</table>

Mean = 3.47
Interestingly, more than a third (31.5%) of respondents thought that the authorities would have a high level of control to ‘stop something going wrong with this water supply system’.

Examination of the mean ratings for the system risk questions, indicates that respondents perceived it to be neither likely nor unlikely that something would go wrong with the water supply system and associated anything going wrong with the system with a high level of seriousness, although respondents generally felt that the authorities would have some control to stop things going wrong.

3.1.10. Attitudes

Respondents were provided with a number of potential outcomes that may result from the proposed recycled water scheme, and asked to rate the likelihood of these outcomes on a 5-point scale, ranging from 1 (highly unlikely) through to 5 (highly likely). Respondents were then asked to rate the importance of each of the potential outcomes, on a similar 5-point scale ranging from 1 (not at all important) through to 5 (extremely important). Details are listed in Tables 23 and 24.

<table>
<thead>
<tr>
<th>Water supply system will result in:</th>
<th>1 Highly unlikely (%)</th>
<th>2 Neither (%)</th>
<th>3 Highly likely (%)</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>More water for future generations (n=500)</td>
<td>3.0</td>
<td>13.0</td>
<td>11.2</td>
<td>57.6</td>
</tr>
<tr>
<td>A long-term water supply (n=499)</td>
<td>4.4</td>
<td>14.3</td>
<td>15.4</td>
<td>54.1</td>
</tr>
<tr>
<td>An environmentally responsible water supply (n=499)</td>
<td>5.4</td>
<td>17.3</td>
<td>16.4</td>
<td>52.1</td>
</tr>
<tr>
<td>Affordable water (n=499)</td>
<td>9.8</td>
<td>21.2</td>
<td>26.3</td>
<td>37.3</td>
</tr>
<tr>
<td>Protection of natural groundwater (n=500)</td>
<td>7.8</td>
<td>25.8</td>
<td>21.0</td>
<td>42.0</td>
</tr>
<tr>
<td>Good tasting drinking water (n=499)</td>
<td>10.8</td>
<td>19.8</td>
<td>37.1</td>
<td>28.1</td>
</tr>
<tr>
<td>Reduced water restrictions (n=500)</td>
<td>10.4</td>
<td>39.7</td>
<td>15.4</td>
<td>29.3</td>
</tr>
</tbody>
</table>

Results indicated that the majority of respondents thought that the proposed water supply would be either likely or highly likely to result in a ‘long term water supply’ (65.9%), would also ‘result in more water for future generations’ (72.8%) and an ‘environmentally responsible water supply’ (60.8%).
Roughly equal numbers of respondents thought that the potential for the recycled water scheme to result in 'good tasting drinking water' was likely (32.3%) and unlikely (30.6%).

Slightly more respondents thought it likely that the scheme would result in 'affordable water' (likely = 42.7%, unlikely = 31.0%), and the 'protection of natural groundwater' (likely = 45.4%, unlikely = 33.6%).

Nearly half of the respondents thought it was unlikely or highly unlikely that the scheme would result in 'reduced water restrictions' (49.4%).

<table>
<thead>
<tr>
<th>Table 24. Importance of potential outcomes of the recycled water scheme</th>
</tr>
</thead>
<tbody>
<tr>
<td>How important are the following:</td>
</tr>
<tr>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>Not all important (%)</td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td>Long term water supply</td>
</tr>
<tr>
<td>(n=500)</td>
</tr>
<tr>
<td>Environmentally responsible water supply</td>
</tr>
<tr>
<td>(n=500)</td>
</tr>
<tr>
<td>More water for future generations</td>
</tr>
<tr>
<td>(n=500)</td>
</tr>
<tr>
<td>Good tasting drinking water</td>
</tr>
<tr>
<td>(n=500)</td>
</tr>
<tr>
<td>Protection of natural groundwater</td>
</tr>
<tr>
<td>(n=500)</td>
</tr>
<tr>
<td>Affordable water</td>
</tr>
<tr>
<td>(n=500)</td>
</tr>
<tr>
<td>Reduced water restrictions</td>
</tr>
<tr>
<td>(n=500)</td>
</tr>
</tbody>
</table>

Nearly all respondents thought that it was either important or extremely important that the water supply system resulted in 'long term water supply' (98.0%), 'environmentally responsible water supply' (96.0%) and 'more water for future generations' (95.4%). More than three-quarters of respondents believed it was important or extremely important that the water supply system resulted in 'protection of natural groundwater' (88.4%), 'affordable water' (86.6%) and 'good tasting drinking water' (86.2%).

Water restrictions did not appear to be of great importance, with almost half of the respondents rating 'water restrictions' as less than somewhat important (44.6%).

Mean responses to both likelihood and importance ratings of potential scheme outcomes are displayed in Figure 9.
Respondents rated the likelihood of the water supply system resulting in more water for future generations significantly higher than all other outcomes, while they rated the importance of a long term water supply, an environmentally responsible water supply, and more water for future generations as more important than the other outcomes. Reduced water restrictions was rated as significantly less important than all other outcomes. For all outcomes other than reduced water restrictions, respondents rated the likelihood of the scheme delivering the outcomes as significantly lower than the importance of the outcomes.

An attitudinal scale was created by multiplying likelihood and importance scores. Results are shown in Figure 10.
3.1.11. Attitudinal Scales

Factor analyses were performed on attitudinal items to yield reliable scales. Six scales were identified with sufficient reliability for ongoing analysis. Each scale had a minimum score of one and a maximum score of five. Descriptive labels were applied as follows.

Community Trust

The Community Trust scale had a Cronbach’s alpha coefficient of .91 and consisted of three items. A scale score was calculated by summing the three attitudinal statements. Higher scores indicated higher levels of community trust in the authorities to provide them with safe, good-quality, well-managed water. The scale is summarised in Table 25.

<table>
<thead>
<tr>
<th>Table 25. Summary for Trust Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>n</strong> (500)</td>
</tr>
<tr>
<td>Mean Score</td>
</tr>
<tr>
<td>Number of Items</td>
</tr>
<tr>
<td>Cronbach’s $\alpha$ Coefficient</td>
</tr>
<tr>
<td>Mean Inter-Item Correlation</td>
</tr>
</tbody>
</table>

Health Risk

The Health Risk scale, composed of four statements, had a Cronbach's alpha coefficient of .90. Higher scores indicated a higher perceived health risk. The scale is summarised in Table 26.

<table>
<thead>
<tr>
<th>Table 26. Summary for Health Risk Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>n</strong> (496)</td>
</tr>
<tr>
<td>Mean Score</td>
</tr>
<tr>
<td>Number of Items</td>
</tr>
<tr>
<td>Cronbach’s $\alpha$ Coefficient</td>
</tr>
<tr>
<td>Mean Inter-Item Correlation</td>
</tr>
</tbody>
</table>

Subjective Norm

The Subjective Norm scale, composed of four statements, had a Cronbach’s alpha coefficient of .73. Higher scores indicated a greater belief that others would support the scheme’s elements. The scale is summarised in Table 27.
Table 27. Summary for Subjective Norm Scale

<table>
<thead>
<tr>
<th></th>
<th>n ( (499) )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Score</td>
<td>2.77</td>
</tr>
<tr>
<td>Number of Items</td>
<td>4</td>
</tr>
<tr>
<td>Cronbach’s ( \alpha ) Coefficient</td>
<td>.73</td>
</tr>
<tr>
<td>Mean Inter-Item Correlation</td>
<td>.41</td>
</tr>
</tbody>
</table>

Groundwater Values

The Groundwater Values scale, composed of four statements, had a Cronbach’s alpha coefficient of .63. Higher scores indicated a greater belief in the protection of and intrinsic value of groundwater. The scale is summarised in Table 28.

Table 28. Summary for Groundwater Values Scale

<table>
<thead>
<tr>
<th></th>
<th>n ( (498) )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Score</td>
<td>3.57</td>
</tr>
<tr>
<td>Number of Items</td>
<td>4</td>
</tr>
<tr>
<td>Cronbach’s ( \alpha ) Coefficient</td>
<td>.63</td>
</tr>
<tr>
<td>Mean Inter-Item Correlation</td>
<td>.30</td>
</tr>
</tbody>
</table>

Environmental Risk

The Environmental Risk scale, composed of five statements, had a Cronbach’s alpha coefficient of .83. Higher scores indicated a greater perception of environmental risk associated with the scheme. The scale is summarised in Table 29.

Table 29. Summary for Environmental Risk Scale

<table>
<thead>
<tr>
<th></th>
<th>n ( (497) )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Score</td>
<td>2.91</td>
</tr>
<tr>
<td>Number of Items</td>
<td>5</td>
</tr>
<tr>
<td>Cronbach’s ( \alpha ) Coefficient</td>
<td>.83</td>
</tr>
<tr>
<td>Mean Inter-Item Correlation</td>
<td>.49</td>
</tr>
</tbody>
</table>
Perceived Control

The Perceived Control scale, composed of five statements, had a Cronbach's alpha coefficient of .58. Higher scores indicated greater perceived personal control over the decision to perform the behaviour. The scale is summarised in Table 30.

Table 30. Summary for Perceived Control Scale

<table>
<thead>
<tr>
<th></th>
<th>n (499)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Score</td>
<td>3.00</td>
</tr>
<tr>
<td>Number of Items</td>
<td>5</td>
</tr>
<tr>
<td>Cronbach’s $\alpha$ Coefficient</td>
<td>.58</td>
</tr>
<tr>
<td>Mean Inter-Item Correlation</td>
<td>.22</td>
</tr>
</tbody>
</table>

3.1.12. Additional Items

A number of additional questions were asked that were not included in the model but may be of interest to water supply planners. Responses are detailed below.

Alternative Water Supply Schemes

Respondents were asked whether they would prefer the MAR scheme that had been presented to them or one of two alternative schemes: a desalination scheme, or a scheme where water was taken from the Yarragadee aquifer in the south-west of the state. Responses can be seen in Figures 11 and 12.

![Figure 11. Preferred water supply system: MAR versus desalination](image-url)
Almost half the respondents said that they would prefer a desalination plant to the MAR scheme proposed in this study (44.1%; Figure 11), while slightly more respondents said that they would prefer the proposed MAR scheme to one in which water is taken from the Yarragadee aquifer (MAR = 33.3%, Yarragadee = 30.5%; Figure 12). However, both questions had very high unsure response levels.

Use of the Aquifer for recycled wastewater

When asked ‘would you consider drinking treated wastewater in a scheme that did not pump into the underground aquifer first’ respondents responded yes (37.2%) and no (36.0%) in similar numbers, while almost a quarter of respondents unsure (26.8%).

Respondents were asked to provide reasons for their responses. Up to three responses were recorded for each respondent. The most common reasons given for why respondents would consider drinking water from a scheme that did not include the aquifer were: ‘as long as the water was treated properly and to a safe standard’ (38.6%); ‘process/treatment ensures that water is safe’ (13.8%); ‘recycled water is used overseas’ (12.2%); and ‘prefer to keep wastewater separate from groundwater’ (10.1%).

For respondents who would not consider drinking water from a scheme that did not include the aquifer were, the most common reasons given were: ‘wouldn’t drink any wastewater’ (16.6%); ‘ground/aquifer acts as a filter’ (14.9%); ‘the thought of drinking wastewater is not appealing’ (10.3%); and ‘concerned about treatment safety’ (8.0%).

The most common reasons for respondents who were unsure whether they would drink water from a scheme that did not include the aquifer were: ‘need more information/don’t know enough’ (35.8%) and ‘depends on the treatment standards’ (16.3%).

Again though, it was evident that a considerable number of responses were qualified. An examination of the reasons for the responses showed that only 20.8% of respondents provided unequivocal intention to drink recycled water if it hadn’t gone through the aquifer first. When compared with Po et al., 2005, unqualified positive intentions have increased. A full list of responses is provided in Appendix 4.
Aquifer storage time

Respondents were then asked, should the recycled wastewater be left underground for a number of years, if there would come a time when there was no difference between the groundwater and the recycled wastewater. Almost half of the respondents (44.7%) said yes, 19.2% said no, and the remaining 36.1% were unsure.

Respondents were asked to provide reasons for their responses. Up to three responses were recorded for each respondent. The most common responses for people who thought there would come a time when there would be no difference between groundwater and recycled wastewater were: ‘aquifer acts as a filter and treats water’ (14.7%) and ‘no difference between wastewater and groundwater over time’ (11.0%).

The most common responses for people who thought there would not come a time when there would be no difference between groundwater and recycled wastewater were: ‘would always be different’ (31.7%) and ‘concerned about aquifer health and contamination’ (10.9%).

For respondents who were unsure whether there would come a time when there would be no difference between groundwater and recycled wastewater, the most common responses were: ‘need more information/don’t know enough’ (45.8%) and ‘don’t know’ (24.1%).

A full list of responses is provided in Appendix 5.

Further Comments

Before the survey concluded, respondents were asked whether they had any more comments about adding recycled wastewater to their underground drinking water supply. Up to three comments were recorded for each respondent. A wide variety of comments were received, the most common being: ‘prefer water pipeline from the North West’ (7.7%); ‘good idea’ (6.7%); and ‘recycling water is okay, but not for drinking’ (6.4%). A full list of responses is provided in Appendix 6.
3.1.13. Socio-Demographics

A number of socio-demographic questions were asked of respondents at the end of the questionnaire. Details are presented in Tables 31-34.

Household Unit

The following table provides a breakdown of the unit of people living in the respondents’ households.

<table>
<thead>
<tr>
<th>Household Unit</th>
<th>n (500)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single adult &lt; 65 years</td>
<td>63</td>
<td>12.6</td>
</tr>
<tr>
<td>Single adult &gt; 65 years</td>
<td>44</td>
<td>8.8</td>
</tr>
<tr>
<td>Two adults - older person &lt; 65</td>
<td>119</td>
<td>23.8</td>
</tr>
<tr>
<td>Two adults - older person &gt; 65</td>
<td>73</td>
<td>14.6</td>
</tr>
<tr>
<td>Single adult - eldest child &lt; 18</td>
<td>19</td>
<td>3.8</td>
</tr>
<tr>
<td>Single adult - eldest child &gt; 18</td>
<td>8</td>
<td>1.6</td>
</tr>
<tr>
<td>Two adults - eldest child &lt; 18</td>
<td>91</td>
<td>18.2</td>
</tr>
<tr>
<td>Two adults - eldest child &gt; 18</td>
<td>41</td>
<td>8.2</td>
</tr>
<tr>
<td>Two adults - no children</td>
<td>33</td>
<td>6.6</td>
</tr>
<tr>
<td>More than two adults - eldest child &lt; 18</td>
<td>7</td>
<td>1.4</td>
</tr>
<tr>
<td>More than two adults - eldest child &gt; 18</td>
<td>2</td>
<td>0.4</td>
</tr>
</tbody>
</table>

Age

The following table provides a breakdown of respondents’ age groups.

<table>
<thead>
<tr>
<th>Age Group</th>
<th>n (500)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>18 to 24 years</td>
<td>28</td>
<td>5.6</td>
</tr>
<tr>
<td>25 to 39 years</td>
<td>102</td>
<td>20.4</td>
</tr>
<tr>
<td>40 to 55 years</td>
<td>160</td>
<td>32.0</td>
</tr>
<tr>
<td>56 to 65 years</td>
<td>98</td>
<td>19.6</td>
</tr>
<tr>
<td>66 to 75 years</td>
<td>78</td>
<td>15.6</td>
</tr>
<tr>
<td>More than 75 years</td>
<td>34</td>
<td>6.8</td>
</tr>
</tbody>
</table>
Education
The following table provides a breakdown of respondents’ highest completed levels of education.

<table>
<thead>
<tr>
<th>Education</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>All or some of primary school</td>
<td>9</td>
<td>1.8</td>
</tr>
<tr>
<td>All or some of secondary school</td>
<td>146</td>
<td>29.2</td>
</tr>
<tr>
<td>Partial trade or technical qualification</td>
<td>16</td>
<td>3.2</td>
</tr>
<tr>
<td>Trade or technical qualification</td>
<td>113</td>
<td>22.6</td>
</tr>
<tr>
<td>Partial university qualification</td>
<td>41</td>
<td>8.2</td>
</tr>
<tr>
<td>University qualification</td>
<td>175</td>
<td>35.0</td>
</tr>
</tbody>
</table>

Income
The following table provides a breakdown of respondents’ gross household income.

<table>
<thead>
<tr>
<th>Gross Household Income</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; $32,000</td>
<td>130</td>
<td>26.0</td>
</tr>
<tr>
<td>$32,001 to $52,000</td>
<td>99</td>
<td>19.8</td>
</tr>
<tr>
<td>$52,001 to $72,000</td>
<td>66</td>
<td>13.2</td>
</tr>
<tr>
<td>$72,001 to $92,000</td>
<td>57</td>
<td>11.4</td>
</tr>
<tr>
<td>&gt; $92,000</td>
<td>86</td>
<td>17.2</td>
</tr>
<tr>
<td>Don’t know</td>
<td>23</td>
<td>4.6</td>
</tr>
<tr>
<td>Refused</td>
<td>39</td>
<td>7.8</td>
</tr>
</tbody>
</table>
3.2. Predicting Intended Behaviour

LISREL 8.72 software (Joreskog, Sorbom, du Toit & du Toit, 2000) and Robust Maximum Likelihood Estimation were used to create an initial exploratory structural equation model containing all of the hypothesised variables. Non-significant relationship pathways were removed, as were any variables with no significant relationship with any other variables. In this stage of exploration, the following variables were removed from the model:

- Knowledge (Actual Knowledge and Self-Reported Knowledge were tried in the model both together and individually);
- Perceived Control;
- Attitude;
- Environmental Risk; and
- Groundwater Values.

The final model can be seen in Figure 13. Figure 13 shows the relationships between the latent variables (shown in the model as ellipses) and their respective indicators (shown in the model as rectangles). This reveals how well the indicators (eg. an emotion item: EMOT1) measure the latent variables of interest (eg. Emotion). Coefficients on these paths can range from -1.0 (ie. a strong negative relationship between the latent variable and the indicator) to +1.0 (ie. a strong positive relationship between the latent variable and the indicator). Figure 13 shows that all indicators in the model have strong positive relationships with the latent variables they were hypothesised to measure.

Figure 13 also shows the relationships between the independent variables and the dependent variable (ie. Intended Behaviour, here BEHAV). The coefficients on these paths can also range from -1.0 (ie. a strong negative relationship between the predictor and Intended Behaviour) to +1.0 (ie. a strong positive relationship between the predictor and Intended Behaviour).

Figure 13. Overall structural equation model
Figure 14 is a simplified version of the structural equation model, and displays the relative strength and significance of pathways. Here, all the pathways shown are statistically significant, with relatively larger effects shown as thick red arrows, relatively moderate effects as thinner purple arrows, and relatively weaker effects as thin green arrows.

Figure 14 shows that four latent variables had significant relationships with Intended Behaviour – Emotion, Subjective Norm, Fairness and Health Risk. Trust did not have a significant direct effect on Intended Behaviour, however it had a significant direct effect on Health Risk, thereby imparting a mediated influence on Intended Behaviour. Figures 13 and 14 suggest that the concepts of Emotion and Subjective Norm are central to the model’s predictive capability, with important contributions from Fairness and Risk. Here, Health Risk is the only risk component to have a direct influence on Intended Behaviour.

The relationships between the variables in the model can be summarised as follows.

- **Intended Behaviour**
  The following conditions lead directly to an increased likelihood of behavioural intention to support the recycled water scheme:
  
  - more positive emotions towards the recycled water scheme;
  - a greater perception that important others will support the recycled water scheme;
  - a greater belief that the recycled water scheme is fair; and
  - lesser levels of perceived health risk associated with the recycled water scheme.
• **Emotion**
  More negative emotions about the recycled water scheme lead directly to:
  - greater levels of perceived threat of system failure associated with the recycled water scheme.

• **System Risk**
  Greater levels of perceived threat of system failure lead directly to:
  - greater levels of perceived health risk associated with the recycled water scheme.

• **Trust**
  Greater levels of trust in authorities involved with the recycled water scheme lead directly to:
  - lesser levels of perceived health risk associated with the recycled water scheme; and
  - lesser levels of perceived threat of system failure.

• **Subjective Norm, Fairness, Trust and Emotion**
  These four factors are strongly interrelated in the model as indicated by the double-headed correlation arrows running between the four variables. These relationships can be described as follows:
  - **Subjective Norm and Fairness**
    A greater belief that important others will support the recycled water scheme is associated with a greater belief that the scheme is fair.
  - **Subjective Norm and Trust**
    A greater belief that important others will support the recycled water scheme is associated with greater levels of trust in authorities involved with the recycled water scheme.
  - **Subjective Norm and Emotion**
    More positive emotions towards the recycled water scheme are associated with a greater belief that important others will support the recycled water scheme.
  - **Fairness and Emotion**
    Greater belief that the scheme is fair is associated with more positive emotions towards the recycled water scheme.
  - **Fairness and Trust**
    A greater belief that the scheme is fair is associated with greater levels of trust in authorities involved with the recycled water scheme.
  - **Trust and Emotion**
    Greater levels of trust in authorities involved with the recycled water scheme is associated with more positive emotions.
The model accounted for 82% of the variance in intended behaviour relating to the proposed recycled water scheme, and its overall goodness-of-fit indices were satisfactory (see Table 35).

The Satorra-Bentler Chi-Square was significant at the .05 level indicating that the model could not reproduce the relationships among the indicators observed in the sample within a .05 level of significance. As the chi-square statistic is known to be upwardly biased in samples of 200 cases or more (Hair et al., 1995) a number of other goodness-of-fit measures to test the overall fit of the model were applied. As can be seen in Table 35, these additional measures were well within recommended values (Kline, 2005).

### Table 35. Model fit indices for initial structural equation model

<table>
<thead>
<tr>
<th>Fit Statistics</th>
<th>Obtained Value</th>
<th>Recommended Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chi-square (df)</td>
<td>357.90 (139), <em>p</em> &lt; .05</td>
<td><em>p</em> &gt; .05</td>
</tr>
<tr>
<td>SRMR</td>
<td>.063</td>
<td>≤ .08</td>
</tr>
<tr>
<td>CFI</td>
<td>.99</td>
<td>≥ .90</td>
</tr>
<tr>
<td>GFI</td>
<td>.92</td>
<td>≥ .90</td>
</tr>
<tr>
<td>RMSEA</td>
<td>.058</td>
<td>≤ .08</td>
</tr>
</tbody>
</table>

#### 3.2.1. Modelling for Risk

To more closely investigate the role of risk in behavioural intention, further modelling was undertaken with the three Risk variables in isolation. As their strong relationship with Trust was evidenced in the initial modelling, Trust was also included. Results of the analysis can be seen in Figure 15.

![Figure 15. Risk structural equation model](image-url)
Figure 16 below provides a simplified version of the model, and displays the relative strength and significance of pathways. Again, larger effects are shown as thick red arrows and moderate effects as thinner purple arrows.

![Simplified Risk structural equation model](image)

**Figure 16. Simplified Risk structural equation model**

Figures 15 and 16 suggest that both Health Risk and Environmental Risk are significant contributors to Intended Behaviour, once the other variables in the previous model are discounted. Again, Trust contributes significantly and importantly to all three components of Risk, and System Risk predicts both Environmental Risk and Health Risk to a significant degree.

This model accounted for 69% of the variance in intended behaviour relating to the proposed recycled water scheme. While the Satorra-Bentler Chi-Square was again significant at the .05 level, the additional goodness of fit measures were well within recommended values (see Table 36).

**Table 36. Model fit indices for risk structural equation model**

<table>
<thead>
<tr>
<th>Fit Statistics</th>
<th>Obtained Value</th>
<th>Recommended Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chi-square (df)</td>
<td>224.35 (59), p&lt;.05</td>
<td>p &gt; .05</td>
</tr>
<tr>
<td>SRMR</td>
<td>.051</td>
<td>≤ .08</td>
</tr>
<tr>
<td>CFI</td>
<td>.98</td>
<td>≥ .90</td>
</tr>
<tr>
<td>GFI</td>
<td>.93</td>
<td>≥ .90</td>
</tr>
<tr>
<td>RMSEA</td>
<td>.077</td>
<td>≤ .08</td>
</tr>
</tbody>
</table>
3.3. Socio-Demographic Differences

A number of one-way between-groups analyses of variance were performed to explore the impact of socio-demographic variables on the key model components. Respondents were grouped according to a number of demographic criteria: income, age, household unit, education, water issues awareness and housing type. These groups were then tested for significant variations in the way they rated the main model components of Intended Behaviour, Subjective Norm, Fairness, Emotion, Trust, System Risk and Health Risk. The following statistically significant differences emerged ($p<0.01$).

**Gender**

- Males scored significantly higher than females on items measuring Intended Behaviour (males: mean = 24.82; females: mean = 22.01), indicating that males were more likely to support the recycled water scheme.
- Females on average scored lower than males on items measuring Emotions (females: mean = 18.05; males: mean = 21.21), indicating that females were more likely to have negative emotions towards the scheme.
- Females generally found the scheme less fair than males, scoring significantly lower on items measuring Fairness (females: mean = 20.42; males: mean = 22.09).
- Females had a greater perception of potential Health Risks than did males (females: mean = 11.74; males: mean = 10.32).
- Females perceived Subjective Norms as being significantly stronger than males did (females: mean = 10.57; males: mean = 9.66), indicating that females were more likely to think that people close to them would support the scheme.

**Other socio-demographics**

No significant differences were identified between key variables in the model and age, education level, family unit or income. The lack of socio-demographic influences on respondents’ ratings of the key model components suggests that results can be extrapolated to the whole Perth population. (Note that there were roughly equal numbers of male and female respondents – n=248 and n=252 respectively).
4. Discussion

4.1. Community Attitudes towards MAR

The results of the community survey provided a number of interesting insights. Firstly, it was found that over half of respondents, at this stage, intended to support a MAR scheme in Perth. However, it also illustrated that a large proportion were not forming strong convictions about the scheme, with large percentages opting for moderate responses to the Intended Behaviour statements. Roughly one-quarter of respondents gave behavioural intention responses that indicated a refusal of support. Further, almost 20% of respondents who had answered “yes” when asked if they would drink water from the scheme also expressed unprompted reservations and qualifications regarding the scheme later in the questionnaire (eg. “need more information”; “there are less risky alternatives”).

In relation to other schemes, more people appeared to prefer a desalination scheme over the proposed MAR scheme. By contrast, less people preferred the option of taking water from the South West Yarragadee as an alternative to the MAR scheme. In both these instances however, a large proportion of respondents were unsure of which they would prefer. This perhaps suggests that a sizeable proportion of those who state support for a MAR scheme do so largely because it represents a positive action in relation to water reuse, but are not convinced it is the best or most agreeable option for water augmentation in Perth. This supposition is supported by some of the qualitative data, where significant proportions of respondents made comments such as “we need to do something immediately” and “something needs to be done”.

While there were no differences based on education levels, income levels, family unit and age, males’ behavioural intentions towards the scheme were significantly more positive than females. Females were more likely to have strong negative emotions about the scheme and perceived a significantly higher threat to human health than did male respondents. Providing appropriate opportunities to encourage the engagement of women in a community involvement program and addressing their concerns will therefore be a priority in the ongoing planning of a MAR scheme.

4.2. Model Consistency and Explanatory Power

As can be seen in a comparison of Figures 2 and 14, this stage of testing replicated the major findings of the preliminary study. Despite the inclusion of additional variables, it was again Emotion and Subjective Norm that had the strongest direct influence on Intended Behaviour. Again, Knowledge failed to contribute significantly to the prediction of Intended Behaviour, even when self-reported knowledge was replaced and/or combined with an actual knowledge measure.

The model was able to account for 82% of the variance in Intended Behaviour (compared with 85% and 89% for the two scenarios in the preliminary study). This figure is remarkably high for a model that attempts to predict people’s decision-making, and could suggest that a proportion of the respondents were intentionally making sure their answers to questionnaire items were consistent with their stated Intended Behaviour. Even if this were so, a model which can explain such a high level of variance remains extremely useful.

4.3. The Role of Risk

In the context of the overall model, Risk (through Health Risk and, indirectly, System Risk) made a significant contribution to the prediction of Intended Behaviour. Its importance became more apparent when isolated (Figure 16), accounting for 69% of the total variance in Intended Behaviour. The strong influence of Risk here may be somewhat surprising considering its role in the overall model, but correlations between Risk, Trust and variables like Emotion and Subjective Norm suggest that its direct influences on Intended Behaviour in
Figure 14 are belied by its strong relationships with the other variables. That is, much of the influence of something like Environmental Risk on Intended Behaviour is accounted for by other variables.

Of the three types of Risk, risk to human health had the greatest bearing on people’s intentions toward the scheme. This is perhaps not surprising given recent media publicity regarding the suggested presence of chemicals and pathogens of concern (eg. traces of particular hormones colloquially referred to as ‘gender-benders’) in reuse schemes and the rising profile of community groups such as CADS (Citizens Against Drinking Sewerage).

When risk was investigated in isolation, it was shown that Environmental Risk also had a significant role in people’s decisions, and as such should not be dismissed as unimportant. It should also be noted that, because Environmental Risk here referred specifically to the risk to the underground water supply, it may be that its strength is ‘scheme specific’.

The issue of risk to the aquifer appears to be a “sleeper” at the moment, but should not be underestimated as the debate continues and people learn more about what is in wastewater. There were indications that respondents were currently unsure about the issue but there were still elements of concern. This was evident in the ratings of statements on intrinsic Groundwater Values as well as the statements of Environmental Risk. It was apparent that people considered the scheme to be unfair to the aquifer, and even some of the Subjective Norm measures showed some indication of concern for the aquifer. So while authorities and scientists are currently promoting the injection of wastewater into the aquifer to assist long term sustainability, concern about foreign materials going into the aquifer has the potential to be a significant future issue for the community.

System Risk did not significantly predict Intended Behaviour directly. However, it was found to be a significant determiner of both Environmental Risk and Health Risk. It can therefore be reasoned that if people become more convinced that the implementation, monitoring and maintenance of the scheme is low risk, they will be less inclined to feel that the scheme poses a risk to their own health or that of the environment.

Another interesting finding confirmed the preliminary finding that Trust predicts Risk. In this analysis, Trust had very strong causal links to all of the components of Risk. This supports the idea, as posited in the risk management literature, that those who trust an organisation tend to find its risk estimates more credible and its policies and proposals more acceptable (Poortinga & Pidgeon, 2003; Slovic, 1993).

4.4. The Role of Fairness

Consistent with previous research covering the role of fairness in decision-making processes about water supply systems (Leviston et al., 2006), this study suggests that people’s judgement of whether a recycled water scheme is fair or not significantly contributes to their Intended Behaviour in support (or protest) of the scheme. The measures here involved overall fairness judgements, as well as fairness to different groups in the community and to the aquifer itself.

This is an important finding for organisations interested in gaining support for recycling schemes. Should only certain sections of the Perth community be required to drink from the MAR scheme, the issue of fairness has the potential to become critical. Fairness is a basic tenet of the “Aussie way of life” and ensuring “a fair go” for fellow citizens is important.
5. Conclusions

In considering the implementation of recycled water schemes which will involve close personal contact with people, such as the indirect potable MAR scenario presented here, decision-making agencies need a tool to identify and address key factors in their communities that are likely to influence their support or otherwise of the schemes. A model such as the one presented here has the ability to identify what is important to people in their decisions and focus community engagement programs on the key areas to address. Issues of importance will change over time, given an open discussion and partnership with the community. This tool will allow the monitoring of variables of importance over time, and ensure greater responsiveness to the community.

Some factors, such as a person’s emotional reaction to a recycled water scheme, can be deeply entrenched and hence represent the ‘high fruit’ for an agency to invest its efforts in. Factors such as perceptions of risk or organisational trust are potentially more flexible and receptive to change. Furthermore, the high correlations between Risk, Trust and the other variables suggest that if one is able to exert change in people’s risk and trust perceptions, one might also promote change in variables otherwise less receptive to change. However, as with all correlations there are unknowns regarding what causes what, and so identifying the directional relationships among these key variables is something that requires a deeper investigation. It does seem reasonable to assume though that building trust in the key organisations has the potential to temper emotional responses.

Specifically in regards to risk, the multiple aspects of risk and people’s perceptions of them need to be explored in order to effectively answer questions such as: what is the community’s idea of acceptable levels of risk? Is this comparable with what the scientific community deems acceptable? What is it exactly that people want to be assured of? Are there differences between what women want to know and what men want to know, or what those with children want to know? It will be important in the ongoing stages of the Premier’s Water Foundation project to work more closely with the “physical risk” work package to discuss some of these questions with the Perth community.

Other pertinent questions will benefit from disaggregating risk too. How does the relationship between risk and trust work? Does a ‘free-riding dilemma’ have any bearing on people’s fairness evaluations? That is, what happens in a scheme where only a selection of the population is affected (for instance, those living north of the Swan River). Would unaffected residents tend to rate such a scheme as more ‘fair’ than the affected residents would rate it?

By exploring these questions we will be able to build a clearer picture of how to engage and communicate with the community, thereby ensuring that their doubts and misgivings are suitably addressed before a scheme is pursued, and, in so doing, maximise its chances of successful implementation.
6. References


APPENDIX 1

Additional information for interviewers regarding the Managed Aquifer Recharge scheme
Terms

Aquifers: Underground soil or rock below the land surface which is saturated with groundwater. Alternatively, they could be described as underground water reservoirs.

Wastewater: All the wastewater from households and industries (including toilet water)

What is Managed Aquifer Recharge (MAR)?

Managed Aquifer Recharge is a method of adding a water source such as recycled water to underground aquifers under controlled conditions. The water can be withdrawn at a later date, or used as a barrier to prevent saltwater or other contaminants from entering the aquifer. Water can be added to the aquifer by a number of methods including infiltration via basins or galleries or by the use of injection wells. This project uses infiltration galleries to recharge the water.

How does an infiltration gallery work?

Treated effluent flows into the system via the inflow pipe. This water comes from a Wastewater Treatment Plant and would otherwise be disposed of in the ocean. The water flows down through a chamber into covered galleries – engineered trenches that facilitate the infiltration of water into the ground (Figure 1).

The galleries consist of parallel slotted pipes containing either gravel or open plastic structures. The top and sides of the galleries are covered in geotextile material to prevent topsoil from entering the galleries, while the base is open to the in situ soil. The trenches are about 10 metres above the water table to allow water quality improvements to occur in the in situ soil before recharging the aquifer.
What effect does this process have on the water?
As the treated water infiltrates the soil, natural biological, chemical and physical processes occur to remove pathogens, chemicals and nutrients from the water. This 'filtering' process continues whilst the water infiltrates and resides in the aquifer. The following water quality improvements occur during the process:
- Removal of nutrients such as phosphates and organics
- Degradation of chemicals such as disinfection by-products
- Pathogen die-off.
This significantly reduces the health and environmental risks that may be associated with secondary treated wastewater, leaving the reclaimed water in similar quality to that of the surrounding groundwater.

How will we be using the MAR water?
Usually, the main purpose of aquifer recharge is to store excess water for later use, while improving water quality by recharging the aquifer with high quality water. If the groundwater is too salty for use then the addition of a fresher reclaimed water supply will displace the saltier groundwater. The method increases water storage in the aquifer, to make more water available for irrigation and other uses and also to preserve water levels in wetlands that are maintained by groundwater. Groundwater recharge may also be used to mitigate or control saltwater intrusion into coastal aquifers.

The water withdrawn from the aquifer can be used to irrigate green open spaces, namely parks, ovals and golf courses, which generally use large quantities of water. In our survey, we are using the withdrawn water in our main water supply, although there are no actual current plans for this to occur.

How long will it be before WA can reliably call on MAR water as a source?
MAR is already in use at one site, at Halls Head in Mandurah, and it is hoped to have more large scale sites functioning within three to four years time.

What processes are in place to reduce health risks associated with using MAR?
Wherever recycled water is used, strict Health Department guidelines for water quality and management including watering times must be met. Extensive work is carried out to ensure that recycled water schemes are designed and monitored to minimise any environmental impact. Each scheme must be individually approved by the WA Department of Health on a 'fit for purpose' basis, depending on the extent of human exposure. All schemes require monitoring for chemicals, radiation, pathogens and heavy metals.

How does the cost of supplying water through MAR compare to desalination?
It costs less to treat and use reclaimed water using MAR than desalination; however should high quality water be required the reclaimed water may still need to be desalinated. As there is much less salt in reclaimed water than seawater, significantly less energy is required to desalinate reclaimed water.

Do other countries use MAR?
There are numerous MAR schemes across Australia. In addition, MAR is actively and successfully used in the USA, Europe, South Africa and India.

This information was produced by CSIRO Land & Water as part of the Water for a Healthy Country Managed Aquifer Recharge project, 2005.
APPENDIX 2

Full list of responses to:
Where does wastewater come from?
Table 1. Where does wastewater come from?

<table>
<thead>
<tr>
<th>Source of Wastewater</th>
<th>Percentage of Respondents (n=500)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laundries</td>
<td>68.4</td>
</tr>
<tr>
<td>Bathrooms</td>
<td>61.0</td>
</tr>
<tr>
<td>Kitchens</td>
<td>59.8</td>
</tr>
<tr>
<td>Toilets</td>
<td>36.8</td>
</tr>
<tr>
<td>Industries</td>
<td>20.4</td>
</tr>
<tr>
<td>Gutters</td>
<td>20.4</td>
</tr>
<tr>
<td>Sewerage</td>
<td>20.4</td>
</tr>
<tr>
<td>All household uses</td>
<td>4.2</td>
</tr>
<tr>
<td>Garden runoff/reticulation</td>
<td>1.2</td>
</tr>
<tr>
<td>Don’t know</td>
<td>0.8</td>
</tr>
<tr>
<td>Water treatment plants/sewerage farms</td>
<td>0.6</td>
</tr>
<tr>
<td>Street runoff</td>
<td>0.4</td>
</tr>
<tr>
<td>Shenton park sewerage depot</td>
<td>0.4</td>
</tr>
<tr>
<td>Second hand/second use water</td>
<td>0.2</td>
</tr>
<tr>
<td>Commercial areas</td>
<td>0.2</td>
</tr>
<tr>
<td>Leaking/burst pipes</td>
<td>0.2</td>
</tr>
<tr>
<td>Farming</td>
<td>0.2</td>
</tr>
<tr>
<td>All water uses</td>
<td>0.2</td>
</tr>
<tr>
<td>Evaporation</td>
<td>0.2</td>
</tr>
<tr>
<td>Bore water</td>
<td>0.2</td>
</tr>
<tr>
<td>Any unused water</td>
<td>0.2</td>
</tr>
<tr>
<td>Pools/ponds</td>
<td>0.2</td>
</tr>
<tr>
<td>All ‘after tap’ use</td>
<td>0.2</td>
</tr>
</tbody>
</table>
APPENDIX 3

Full list of responses to:
What is recycled wastewater currently being used for in Australia?
Table 2. What is recycled wastewater currently being used for in Australia?

<table>
<thead>
<tr>
<th>Use of Recycled Wastewater</th>
<th>Percentage of Respondents (n=500)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Watering household lawns and gardens</td>
<td>38.6</td>
</tr>
<tr>
<td>Watering some parks and reserves</td>
<td>19.4</td>
</tr>
<tr>
<td>Watering sports ovals</td>
<td>8.4</td>
</tr>
<tr>
<td>Watering food crops</td>
<td>8.4</td>
</tr>
<tr>
<td>Industrial use</td>
<td>7.6</td>
</tr>
<tr>
<td>Drinking water</td>
<td>6.0</td>
</tr>
<tr>
<td>Irrigation/reticulation</td>
<td>2.4</td>
</tr>
<tr>
<td>Watering golf courses</td>
<td>2.0</td>
</tr>
<tr>
<td>Don't know</td>
<td>1.6</td>
</tr>
<tr>
<td>Cooling plants in steel production</td>
<td>0.8</td>
</tr>
<tr>
<td>Watering</td>
<td>0.6</td>
</tr>
<tr>
<td>All household uses including drinking</td>
<td>0.6</td>
</tr>
<tr>
<td>Car washes</td>
<td>0.6</td>
</tr>
<tr>
<td>Vineyards and market gardens</td>
<td>0.6</td>
</tr>
<tr>
<td>Tree farms</td>
<td>0.4</td>
</tr>
<tr>
<td>Greywater recycling</td>
<td>0.4</td>
</tr>
<tr>
<td>Sewage</td>
<td>0.4</td>
</tr>
<tr>
<td>Dust suppression</td>
<td>0.2</td>
</tr>
<tr>
<td>Caravan parks</td>
<td>0.2</td>
</tr>
<tr>
<td>Houses in Perth and near Denmark</td>
<td>0.2</td>
</tr>
<tr>
<td>Watering trees</td>
<td>0.2</td>
</tr>
<tr>
<td>General farming uses</td>
<td>0.2</td>
</tr>
<tr>
<td>Treatment plants</td>
<td>0.2</td>
</tr>
<tr>
<td>Irrigation in Werribee</td>
<td>0.2</td>
</tr>
<tr>
<td>Bores</td>
<td>0.2</td>
</tr>
<tr>
<td>Showers on Rottenest Island</td>
<td>0.2</td>
</tr>
<tr>
<td>At the ‘Curtin Recycling House’</td>
<td>0.2</td>
</tr>
<tr>
<td>Street runoff</td>
<td>0.2</td>
</tr>
<tr>
<td>Recycling experiments</td>
<td>0.2</td>
</tr>
<tr>
<td>During the manufacturing process</td>
<td>0.2</td>
</tr>
<tr>
<td>Sydney greywater reuse</td>
<td>0.2</td>
</tr>
<tr>
<td>Being pumped into creeks</td>
<td>0.2</td>
</tr>
<tr>
<td>North Beach Primary School</td>
<td>0.2</td>
</tr>
</tbody>
</table>
Table 2 cont. What is recycled wastewater currently being used for in Australia?

<table>
<thead>
<tr>
<th>Use of Recycled Wastewater</th>
<th>Percentage of Respondents (n=500)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recycled on ships</td>
<td>0.2</td>
</tr>
<tr>
<td>Power stations</td>
<td>0.2</td>
</tr>
<tr>
<td>Reuse in South Australia</td>
<td>0.2</td>
</tr>
<tr>
<td>Crops in NSW</td>
<td>0.2</td>
</tr>
<tr>
<td>Agriculture</td>
<td>0.2</td>
</tr>
<tr>
<td>Toilets</td>
<td>0.2</td>
</tr>
<tr>
<td>Water pumped into aquifer at Cottesloe</td>
<td>0.2</td>
</tr>
</tbody>
</table>
APPENDIX 4

Full list of responses to:
Would you drink recycled wastewater if had not been injected into an aquifer first?
Table 3. Reasons for saying “yes” to drinking treated recycled wastewater from a scheme that did not pump into an underground aquifer first

<table>
<thead>
<tr>
<th>Reason</th>
<th>Percentage of Respondents (n=189)</th>
</tr>
</thead>
<tbody>
<tr>
<td>As long as the water is treated properly and to a safe standard</td>
<td>38.6</td>
</tr>
<tr>
<td>Process/treatment ensures that water is safe</td>
<td>13.8</td>
</tr>
<tr>
<td>Recycled water is used overseas</td>
<td>12.2</td>
</tr>
<tr>
<td>Prefer to keep wastewater separate from groundwater</td>
<td>10.1</td>
</tr>
<tr>
<td>Concerned about the health of our aquifers</td>
<td>7.4</td>
</tr>
<tr>
<td>No difference whether it goes through the aquifer or not</td>
<td>5.8</td>
</tr>
<tr>
<td>I would be happy to try it</td>
<td>4.2</td>
</tr>
<tr>
<td>Prefer water through aquifer</td>
<td>3.7</td>
</tr>
<tr>
<td>Depends on the taste and smell</td>
<td>2.7</td>
</tr>
<tr>
<td>Other</td>
<td>2.7</td>
</tr>
<tr>
<td>The water would still be treated/purified</td>
<td>2.7</td>
</tr>
<tr>
<td>Consider this a last resort/only to be considered if there are no other options</td>
<td>2.1</td>
</tr>
<tr>
<td>Need to alleviate water shortages</td>
<td>1.6</td>
</tr>
<tr>
<td>Would filter my own water</td>
<td>1.6</td>
</tr>
<tr>
<td>Scheme is good/acceptable</td>
<td>1.1</td>
</tr>
<tr>
<td>I only drink bottled water anyway</td>
<td>1.1</td>
</tr>
<tr>
<td>Everyone would have the same water supply</td>
<td>1.1</td>
</tr>
<tr>
<td>There is more control over the water quality if it is not mixed with the groundwater</td>
<td>1.1</td>
</tr>
<tr>
<td>Would still be treated</td>
<td>1.1</td>
</tr>
<tr>
<td>Couldn’t tell the difference</td>
<td>0.5</td>
</tr>
<tr>
<td>Water would be purer if not mixed with underground water</td>
<td>0.5</td>
</tr>
<tr>
<td>Depends on the system</td>
<td>0.5</td>
</tr>
<tr>
<td>Could be better quality than our underground water</td>
<td>0.5</td>
</tr>
<tr>
<td>Would drink anything if thirsty enough</td>
<td>0.5</td>
</tr>
<tr>
<td>Not all underground water is ‘ancient’</td>
<td>0.5</td>
</tr>
<tr>
<td>Underground water already collects pollutants</td>
<td>0.5</td>
</tr>
<tr>
<td>Good for the environment</td>
<td>0.5</td>
</tr>
<tr>
<td>Don’t trust the treatment standards</td>
<td>0.5</td>
</tr>
<tr>
<td>Would need more information</td>
<td>0.5</td>
</tr>
<tr>
<td>Better to protect the aquifer</td>
<td>0.5</td>
</tr>
<tr>
<td>Recycling water is good</td>
<td>0.5</td>
</tr>
<tr>
<td>Recycled water is used on ships and fishing boats</td>
<td>0.5</td>
</tr>
<tr>
<td>I have a rainwater tank</td>
<td>0.5</td>
</tr>
</tbody>
</table>
Table 3 cont. Reasons for saying “yes” to drinking treated recycled wastewater from a scheme that did not pump into an underground aquifer first

<table>
<thead>
<tr>
<th>Reason</th>
<th>Percentage of Respondents (n=189)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concerned about system failure</td>
<td>0.5</td>
</tr>
<tr>
<td>People should have a choice what water they drink</td>
<td>0.5</td>
</tr>
<tr>
<td>I recycle my own wastewater ('Ecomax’ system)</td>
<td>0.5</td>
</tr>
<tr>
<td>Putting water into the aquifer is not safe</td>
<td>0.5</td>
</tr>
<tr>
<td>Recycling schemes overseas do not use aquifers</td>
<td>0.5</td>
</tr>
<tr>
<td>Recycled water would taste better then Perth water</td>
<td>0.5</td>
</tr>
</tbody>
</table>

Table 4. Reasons for saying “unsure” to drinking treated recycled wastewater from a scheme that did not pump into an underground aquifer first

<table>
<thead>
<tr>
<th>Reason</th>
<th>Percentage of Respondents (n=123)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Need more information/don’t know enough</td>
<td>35.8</td>
</tr>
<tr>
<td>Depends on the treatment standards</td>
<td>16.3</td>
</tr>
<tr>
<td>Don’t know</td>
<td>9.8</td>
</tr>
<tr>
<td>Aquifer acts as a filter</td>
<td>8.1</td>
</tr>
<tr>
<td>Uncertain about the treatment standards/water quality</td>
<td>5.7</td>
</tr>
<tr>
<td>Concerned about wastewater harming the aquifer</td>
<td>4.1</td>
</tr>
<tr>
<td>More research and trials needed</td>
<td>4.1</td>
</tr>
<tr>
<td>Prefer it to go through the aquifer</td>
<td>4.1</td>
</tr>
<tr>
<td>Would try it</td>
<td>3.3</td>
</tr>
<tr>
<td>Don’t like the thought of drinking recycled water</td>
<td>3.3</td>
</tr>
<tr>
<td>Other</td>
<td>1.6</td>
</tr>
<tr>
<td>Concerned about system failure</td>
<td>0.8</td>
</tr>
<tr>
<td>Need more information about successes elsewhere</td>
<td>0.8</td>
</tr>
<tr>
<td>Once wastewater is in the aquifer it can’t be retrieved</td>
<td>0.8</td>
</tr>
<tr>
<td>Would use recycled water but not for drinking</td>
<td>0.8</td>
</tr>
<tr>
<td>Aquifer has a limited capacity for filtration</td>
<td>0.8</td>
</tr>
<tr>
<td>Not sure about the process</td>
<td>0.8</td>
</tr>
<tr>
<td>Would not drink water unless I had to</td>
<td>0.8</td>
</tr>
<tr>
<td>Don’t understand the science</td>
<td>0.8</td>
</tr>
<tr>
<td>Trust the authorities to make sure that the water is ok</td>
<td>0.8</td>
</tr>
<tr>
<td>I drink bottled water</td>
<td>0.8</td>
</tr>
<tr>
<td>Would drink recycled ‘greywater’ but not ‘black water’</td>
<td>0.8</td>
</tr>
<tr>
<td>Depends on the taste and the smell</td>
<td>0.8</td>
</tr>
</tbody>
</table>
### Table 4 cont. Reasons for saying “unsure” to drinking treated recycled wastewater from a scheme that did not pump into an underground aquifer first

<table>
<thead>
<tr>
<th>Reason</th>
<th>Percentage of Respondents (n=123)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Don’t know what the future impacts might be</td>
<td>0.8</td>
</tr>
<tr>
<td>If people could try the water first</td>
<td>0.8</td>
</tr>
<tr>
<td>Should consider other options first</td>
<td>0.8</td>
</tr>
<tr>
<td>Should be used for industry</td>
<td>0.8</td>
</tr>
<tr>
<td>Prefer to keep wastewater and groundwater separate</td>
<td>0.8</td>
</tr>
<tr>
<td>Ok as a short term solution</td>
<td>0.8</td>
</tr>
<tr>
<td>The longer it is underground the less contaminated it will be</td>
<td>0.8</td>
</tr>
<tr>
<td>Need more public education and reassurance</td>
<td>0.8</td>
</tr>
<tr>
<td>If it was proven safe</td>
<td>0.8</td>
</tr>
</tbody>
</table>

### Table 5. Reasons for saying “no” to drinking treated recycled wastewater from a scheme that did not pump into an underground aquifer first

<table>
<thead>
<tr>
<th>Reason</th>
<th>Percentage of Respondents (n=176)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wouldn’t drink any wastewater</td>
<td>16.6</td>
</tr>
<tr>
<td>Ground/aquifer acts as a filter</td>
<td>14.9</td>
</tr>
<tr>
<td>The thought of drinking wastewater is not appealing/is ‘yucky’</td>
<td>10.3</td>
</tr>
<tr>
<td>Concerned about treatment safety</td>
<td>8.0</td>
</tr>
<tr>
<td>Would need to be highly filtered</td>
<td>6.9</td>
</tr>
<tr>
<td>Would cause illnesses and health issues</td>
<td>4.6</td>
</tr>
<tr>
<td>Wastewater should not be used for drinking or personal use</td>
<td>4.0</td>
</tr>
<tr>
<td>Wastewater is good for gardens</td>
<td>4.0</td>
</tr>
<tr>
<td>Prefer wastewater to go through the aquifer</td>
<td>4.0</td>
</tr>
<tr>
<td>Prefer rainwater</td>
<td>3.4</td>
</tr>
<tr>
<td>Would not be pure</td>
<td>3.4</td>
</tr>
<tr>
<td>Don’t like it</td>
<td>2.9</td>
</tr>
<tr>
<td>Don’t know enough about it/need more information</td>
<td>2.9</td>
</tr>
<tr>
<td>Concerned about water quality</td>
<td>2.9</td>
</tr>
<tr>
<td>Wastewater is good for purposes other than drinking</td>
<td>2.9</td>
</tr>
<tr>
<td>Don’t trust government implementation</td>
<td>2.3</td>
</tr>
<tr>
<td>Prefer natural treatment to chemical</td>
<td>2.3</td>
</tr>
<tr>
<td>Too many chemicals in wastewater</td>
<td>1.7</td>
</tr>
<tr>
<td>Concerned about system failure</td>
<td>1.7</td>
</tr>
<tr>
<td>The more diluted the wastewater the better</td>
<td>1.7</td>
</tr>
</tbody>
</table>
Table 5 cont. Reasons for saying “no” to drinking treated recycled wastewater from a scheme that did not pump into an underground aquifer first

<table>
<thead>
<tr>
<th>Reason</th>
<th>Percentage of Respondents (n=176)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concerned about germs/bacteria</td>
<td>1.7</td>
</tr>
<tr>
<td>Wastewater without the aquifer is not as pure/safe</td>
<td>1.1</td>
</tr>
<tr>
<td>Human error possible</td>
<td>1.1</td>
</tr>
<tr>
<td>Prefer not to mix wastewater with groundwater</td>
<td>1.1</td>
</tr>
<tr>
<td>This water supply is too risky/unsafe</td>
<td>1.1</td>
</tr>
<tr>
<td>Recycled wastewater should be used for industry</td>
<td>1.1</td>
</tr>
<tr>
<td>Treatment alone is not enough without the aquifer</td>
<td>1.1</td>
</tr>
<tr>
<td>Recycled water will damage the aquifer</td>
<td>1.1</td>
</tr>
<tr>
<td>Would need to be convinced that it was safe</td>
<td>1.1</td>
</tr>
<tr>
<td>Should be exploring other alternatives</td>
<td>1.1</td>
</tr>
<tr>
<td>Don’t drink tap water now</td>
<td>1.1</td>
</tr>
<tr>
<td>Aquifer is an important part of the treatment process</td>
<td>1.1</td>
</tr>
<tr>
<td>Other</td>
<td>1.1</td>
</tr>
<tr>
<td>Using recycled wastewater is an environmental risk</td>
<td>0.6</td>
</tr>
<tr>
<td>Water needs time to purify</td>
<td>0.6</td>
</tr>
<tr>
<td>Don’t know</td>
<td>0.6</td>
</tr>
<tr>
<td>Public opinions should be taken into account</td>
<td>0.6</td>
</tr>
<tr>
<td>Would not taste nice</td>
<td>0.6</td>
</tr>
<tr>
<td>Don’t want wastewater straight from its source</td>
<td>0.6</td>
</tr>
<tr>
<td>We don’t know enough about the system and risks</td>
<td>0.6</td>
</tr>
<tr>
<td>Aquifer will make no difference</td>
<td>0.6</td>
</tr>
<tr>
<td>Do not agree with any wastewater reuse</td>
<td>0.6</td>
</tr>
<tr>
<td>Will not drink water from toilets</td>
<td>0.6</td>
</tr>
<tr>
<td>It is a mind set/psychological</td>
<td>0.6</td>
</tr>
<tr>
<td>Groundwater has impurities too</td>
<td>0.6</td>
</tr>
<tr>
<td>Should be a last resort</td>
<td>0.6</td>
</tr>
</tbody>
</table>
APPENDIX 5

Full list of responses to:
Would there come a time when there would be no difference between wastewater and groundwater?
Table 6. Respondents’ reasons for saying that there would be no difference between groundwater and wastewater if mixed underground for a number of years

<table>
<thead>
<tr>
<th>Reason</th>
<th>Percentage of Respondents (n=123)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aquifer acts as a filter and treats water</td>
<td>14.7</td>
</tr>
<tr>
<td>No difference between wastewater and groundwater over time</td>
<td>11.0</td>
</tr>
<tr>
<td>Natural processes/purification</td>
<td>9.8</td>
</tr>
<tr>
<td>In 20 years or more</td>
<td>7.8</td>
</tr>
<tr>
<td>Water becomes purer over time with less pollutants</td>
<td>6.5</td>
</tr>
<tr>
<td>Would mix with the groundwater almost immediately</td>
<td>5.3</td>
</tr>
<tr>
<td>All groundwater started as runoff or wastewater</td>
<td>5.3</td>
</tr>
<tr>
<td>Only after a long time</td>
<td>4.9</td>
</tr>
<tr>
<td>Within 5 to 10 years</td>
<td>2.9</td>
</tr>
<tr>
<td>In a couple of million years</td>
<td>2.5</td>
</tr>
<tr>
<td>Would get used to it so it would seem the same</td>
<td>2.0</td>
</tr>
<tr>
<td>In 6 months</td>
<td>2.0</td>
</tr>
<tr>
<td>In 3 to 5 years</td>
<td>2.0</td>
</tr>
<tr>
<td>I just think it would</td>
<td>2.0</td>
</tr>
<tr>
<td>Other</td>
<td>2.0</td>
</tr>
<tr>
<td>Sounds logical</td>
<td>1.6</td>
</tr>
<tr>
<td>If it was treated again when removed</td>
<td>1.6</td>
</tr>
<tr>
<td>If it is filtered/treated properly</td>
<td>1.2</td>
</tr>
<tr>
<td>Depend on the ratios</td>
<td>1.2</td>
</tr>
<tr>
<td>The longer underground the less difference</td>
<td>1.2</td>
</tr>
<tr>
<td>The longer it is underground the more it will be accepted</td>
<td>1.2</td>
</tr>
<tr>
<td>Would blend if there was enough water in the aquifer</td>
<td>0.8</td>
</tr>
<tr>
<td>Because it would be treated first</td>
<td>0.8</td>
</tr>
<tr>
<td>Assuming that the aquifer continues to remove nutrients</td>
<td>0.8</td>
</tr>
<tr>
<td>There would always be some scientific difference</td>
<td>0.8</td>
</tr>
<tr>
<td>In 50 years</td>
<td>0.8</td>
</tr>
<tr>
<td>Within a few years</td>
<td>0.8</td>
</tr>
<tr>
<td>Biological waste would break down over time</td>
<td>0.8</td>
</tr>
<tr>
<td>Sedimentation would occur</td>
<td>0.8</td>
</tr>
<tr>
<td>Needs more research</td>
<td>0.8</td>
</tr>
<tr>
<td>Not a hundred percent sure</td>
<td>0.4</td>
</tr>
<tr>
<td>Would mix/dilute with the groundwater</td>
<td>0.4</td>
</tr>
</tbody>
</table>
Table 6 cont. Respondents’ reasons for saying that there would be no difference between groundwater and wastewater if mixed underground for a number of years

<table>
<thead>
<tr>
<th>Reason</th>
<th>Percentage of Respondents (n=123)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wouldn’t notice the difference</td>
<td>0.4</td>
</tr>
<tr>
<td>Within 1 to 2 years</td>
<td>0.4</td>
</tr>
<tr>
<td>Microbiology will ensure clean water</td>
<td>0.4</td>
</tr>
<tr>
<td>Even rainwater is not pure</td>
<td>0.4</td>
</tr>
<tr>
<td>As long as the chemicals were removed</td>
<td>0.4</td>
</tr>
<tr>
<td>Would have no choice but to drink it</td>
<td>0.4</td>
</tr>
<tr>
<td>Would taste it/try it</td>
<td>0.4</td>
</tr>
<tr>
<td>Don’t know/don’t understand how the system works</td>
<td>0.4</td>
</tr>
<tr>
<td>Concerned about long term impacts</td>
<td>0.4</td>
</tr>
<tr>
<td>Similar process to septic tanks</td>
<td>0.4</td>
</tr>
<tr>
<td>Would take up to 100 years</td>
<td>0.4</td>
</tr>
<tr>
<td>Would get used to the idea</td>
<td>0.4</td>
</tr>
</tbody>
</table>

Table 7. Respondents’ reasons for saying they were unsure whether there would be a difference between groundwater and wastewater if mixed underground for a number of years

<table>
<thead>
<tr>
<th>Reason</th>
<th>Percentage of Respondents (n=166)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Need more information/don’t know enough</td>
<td>45.8</td>
</tr>
<tr>
<td>Don’t know</td>
<td>24.1</td>
</tr>
<tr>
<td>Would always be different</td>
<td>3.0</td>
</tr>
<tr>
<td>Differences would be indistinguishable</td>
<td>2.4</td>
</tr>
<tr>
<td>Would need a lot of testing</td>
<td>2.4</td>
</tr>
<tr>
<td>Won’t know what the water quality is for many years</td>
<td>2.4</td>
</tr>
<tr>
<td>Depends on the ratios</td>
<td>1.8</td>
</tr>
<tr>
<td>It would depend on scientific evidence and testing</td>
<td>1.2</td>
</tr>
<tr>
<td>Over time it might become less ‘yucky’/more acceptable</td>
<td>1.2</td>
</tr>
<tr>
<td>Concerned about damaging aquifer</td>
<td>1.2</td>
</tr>
<tr>
<td>More research/trials/testing needed</td>
<td>1.2</td>
</tr>
<tr>
<td>Don’t like this system</td>
<td>1.2</td>
</tr>
<tr>
<td>It would take a long time</td>
<td>1.2</td>
</tr>
<tr>
<td>We don’t know how wastewater will effect the aquifer</td>
<td>1.2</td>
</tr>
<tr>
<td>Aquifer would not clean water to an acceptable level</td>
<td>0.6</td>
</tr>
<tr>
<td>Uncomfortable about drinking water from toilets</td>
<td>0.6</td>
</tr>
<tr>
<td>Too many considerations</td>
<td>0.6</td>
</tr>
</tbody>
</table>
Table 7 cont. Respondents’ reasons for saying they were unsure whether there would be a difference between groundwater and wastewater if mixed underground for a number of years

<table>
<thead>
<tr>
<th>Reason</th>
<th>Percentage of Respondents (n=166)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Process should make water purer</td>
<td>0.6</td>
</tr>
<tr>
<td>I drink bottled water anyway</td>
<td>0.6</td>
</tr>
<tr>
<td>Could damage the aquifer slowly</td>
<td>0.6</td>
</tr>
<tr>
<td>Depends on the ‘pre-aquifer’ treatment standards</td>
<td>0.6</td>
</tr>
<tr>
<td>The ‘sand’ will end up contaminated</td>
<td>0.6</td>
</tr>
<tr>
<td>May change a bit</td>
<td>0.6</td>
</tr>
<tr>
<td>Would probably be ok</td>
<td>0.6</td>
</tr>
<tr>
<td>Recycled water should not be used for drinking</td>
<td>0.6</td>
</tr>
<tr>
<td>Concerned about health issues</td>
<td>0.6</td>
</tr>
<tr>
<td>Depends on the taste</td>
<td>0.6</td>
</tr>
<tr>
<td>Don’t know how long it would take</td>
<td>0.6</td>
</tr>
<tr>
<td>Would mix in around 6 months</td>
<td>0.6</td>
</tr>
<tr>
<td>Depends on the treatment when taken out of the aquifer</td>
<td>0.6</td>
</tr>
<tr>
<td>In 100 years time</td>
<td>0.6</td>
</tr>
<tr>
<td>Other</td>
<td>0.6</td>
</tr>
<tr>
<td>The thought of recycled water is the biggest problem</td>
<td>0.6</td>
</tr>
<tr>
<td>Depends on the retrieval process</td>
<td>0.6</td>
</tr>
<tr>
<td>After a few thousand years</td>
<td>0.6</td>
</tr>
</tbody>
</table>

Table 8. Respondents’ reasons for saying that there would still be a difference between groundwater and wastewater if mixed underground for a number of years

<table>
<thead>
<tr>
<th>Reason</th>
<th>Percentage of Respondents (n=101)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Would always be different</td>
<td>31.7</td>
</tr>
<tr>
<td>Concerned about aquifer health and contamination</td>
<td>10.9</td>
</tr>
<tr>
<td>Need more information/don’t know</td>
<td>7.9</td>
</tr>
<tr>
<td>Time in the aquifer would make little difference to quality</td>
<td>5.9</td>
</tr>
<tr>
<td>Some elements would never mix</td>
<td>5.9</td>
</tr>
<tr>
<td>Uncertain what difference time would make</td>
<td>4.0</td>
</tr>
<tr>
<td>Do not think it would mix</td>
<td>4.0</td>
</tr>
<tr>
<td>Don’t like the thought of drinking wastewater</td>
<td>4.0</td>
</tr>
<tr>
<td>Chemicals from treatment would always remain</td>
<td>4.0</td>
</tr>
</tbody>
</table>
Table 8 cont. Respondents’ reasons for saying that there would still be a difference between groundwater and wastewater if mixed underground for a number of years

<table>
<thead>
<tr>
<th>Reason</th>
<th>Percentage of Respondents (n=101)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other</td>
<td>3.0</td>
</tr>
<tr>
<td>Wastewater is not natural</td>
<td>3.0</td>
</tr>
<tr>
<td>Concerned about health risks</td>
<td>3.0</td>
</tr>
<tr>
<td>Would always perceive it as different</td>
<td>2.0</td>
</tr>
<tr>
<td>The longer the water is in the aquifer the worse the water would get</td>
<td>2.0</td>
</tr>
<tr>
<td>Don’t like the chemicals in the water</td>
<td>2.0</td>
</tr>
<tr>
<td>Groundwater would be better</td>
<td>1.0</td>
</tr>
<tr>
<td>Don’t trust this type of scheme</td>
<td>1.0</td>
</tr>
<tr>
<td>Cultural/spiritual beliefs</td>
<td>1.0</td>
</tr>
<tr>
<td>Would not drink wastewater</td>
<td>1.0</td>
</tr>
<tr>
<td>Water would stay in different parts of the aquifer</td>
<td>1.0</td>
</tr>
<tr>
<td>Oil and water would not mix</td>
<td>1.0</td>
</tr>
<tr>
<td>Not in my lifetime</td>
<td>1.0</td>
</tr>
<tr>
<td>Would depend on what was in the wastewater</td>
<td>1.0</td>
</tr>
<tr>
<td>Don’t like being experimented with</td>
<td>1.0</td>
</tr>
<tr>
<td>Not enough is known about wastewater</td>
<td>1.0</td>
</tr>
<tr>
<td>Needs more testing</td>
<td>1.0</td>
</tr>
<tr>
<td>Would need to be convinced that it was safe</td>
<td>1.0</td>
</tr>
<tr>
<td>Wastewater would always be contaminated</td>
<td>1.0</td>
</tr>
<tr>
<td>Human faeces would remain in the water</td>
<td>1.0</td>
</tr>
<tr>
<td>Would not notice the difference</td>
<td>1.0</td>
</tr>
<tr>
<td>It would take so long to break down we wouldn’t notice it</td>
<td>1.0</td>
</tr>
<tr>
<td>Would never be as pure</td>
<td>1.0</td>
</tr>
</tbody>
</table>
APPENDIX 6
Full list of other comments
<table>
<thead>
<tr>
<th>Comments</th>
<th>Percentage of Respondents (n=298)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prefer water pipeline from the North West</td>
<td>7.7</td>
</tr>
<tr>
<td>Good idea</td>
<td>6.7</td>
</tr>
<tr>
<td>Recycling water is ok but not for drinking</td>
<td>6.4</td>
</tr>
<tr>
<td>Need more information/Don’t know enough</td>
<td>5.7</td>
</tr>
<tr>
<td>We need to do something immediately</td>
<td>5.4</td>
</tr>
<tr>
<td>Wastewater should be used on gardens/parks/agriculture</td>
<td>5.0</td>
</tr>
<tr>
<td>Scheme requires expert testing and lots of research</td>
<td>4.7</td>
</tr>
<tr>
<td>Something needs to be done</td>
<td>4.0</td>
</tr>
<tr>
<td>Concerned about the health of underground water supplies/chemicals in the water</td>
<td>4.0</td>
</tr>
<tr>
<td>Don’t like the scheme</td>
<td>3.7</td>
</tr>
<tr>
<td>Scheme frightens me, I hope it never happens</td>
<td>3.7</td>
</tr>
<tr>
<td>Recycled water should be used for industry</td>
<td>3.7</td>
</tr>
<tr>
<td>There are less risky alternatives/need to consider all alternatives</td>
<td>3.7</td>
</tr>
<tr>
<td>Don’t trust the government</td>
<td>3.0</td>
</tr>
<tr>
<td>Everyone should have rainwater tanks</td>
<td>3.0</td>
</tr>
<tr>
<td>Okay if it is done properly and safely</td>
<td>3.0</td>
</tr>
<tr>
<td>Prefer desalination</td>
<td>3.0</td>
</tr>
<tr>
<td>Recycled wastewater is used successfully overseas</td>
<td>2.7</td>
</tr>
<tr>
<td>Would like a combination of systems working in conjunction</td>
<td>2.7</td>
</tr>
<tr>
<td>Don’t like the idea of wastewater</td>
<td>2.4</td>
</tr>
<tr>
<td>Don’t like desalination/think it costs too much and will harm the environment</td>
<td>2.4</td>
</tr>
<tr>
<td>It will be hard to convince the public/hard to ‘sell’ the product</td>
<td>2.4</td>
</tr>
<tr>
<td>Scheme is ok if treatment is monitored</td>
<td>2.0</td>
</tr>
<tr>
<td>Too much water is currently being wasted</td>
<td>2.0</td>
</tr>
<tr>
<td>Concerned about scheme/system failure</td>
<td>2.0</td>
</tr>
<tr>
<td>Not a very good idea</td>
<td>2.0</td>
</tr>
<tr>
<td>I would only drink if there were no alternatives</td>
<td>1.7</td>
</tr>
<tr>
<td>Need more alternative water catchments</td>
<td>1.7</td>
</tr>
<tr>
<td>Yarragadee is not a good option</td>
<td>1.7</td>
</tr>
<tr>
<td>Need public education</td>
<td>1.7</td>
</tr>
<tr>
<td>Good idea as long as it is sustainable and safe for the aquifer</td>
<td>1.7</td>
</tr>
<tr>
<td>Concerned about contaminating the environment</td>
<td>1.7</td>
</tr>
<tr>
<td>This is the best option so far</td>
<td>1.7</td>
</tr>
<tr>
<td>Comments</td>
<td>Percentage of Respondents (n=298)</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>-----------------------------------</td>
</tr>
<tr>
<td>Industry and agriculture use too much water</td>
<td>1.7</td>
</tr>
<tr>
<td>Need to keep the community informed and have community input</td>
<td>1.7</td>
</tr>
<tr>
<td>Concerned about cost</td>
<td>1.7</td>
</tr>
<tr>
<td>Water problems should have been addressed years ago</td>
<td>1.3</td>
</tr>
<tr>
<td>People should be educated to use less water</td>
<td>1.3</td>
</tr>
<tr>
<td>Should be run by the government not private companies</td>
<td>1.3</td>
</tr>
<tr>
<td>Water should cost more</td>
<td>1.3</td>
</tr>
<tr>
<td>If our groundwater became contaminated it could never be fixed</td>
<td>1.3</td>
</tr>
<tr>
<td>Population and growth limits need to be considered</td>
<td>1.3</td>
</tr>
<tr>
<td>Possible long term consequences and issues</td>
<td>1.3</td>
</tr>
<tr>
<td>We should harvest more rainwater runoff</td>
<td>1.3</td>
</tr>
<tr>
<td>No need to put wastewater into the ground/aquifer</td>
<td>1.3</td>
</tr>
<tr>
<td>No problems with this scheme</td>
<td>1.0</td>
</tr>
<tr>
<td>I support recycling</td>
<td>1.0</td>
</tr>
<tr>
<td>This should be a last resort</td>
<td>1.0</td>
</tr>
<tr>
<td>We must reuse our water</td>
<td>1.0</td>
</tr>
<tr>
<td>Freshwater should be used in households</td>
<td>1.0</td>
</tr>
<tr>
<td>Need to do something</td>
<td>1.0</td>
</tr>
<tr>
<td>Most wouldn’t approve/accept this scheme</td>
<td>1.0</td>
</tr>
<tr>
<td>If people knew about the system and it was proven safe they would accept it</td>
<td>1.0</td>
</tr>
<tr>
<td>Would not drink it</td>
<td>0.7</td>
</tr>
<tr>
<td>Experts/authorities don’t know enough</td>
<td>0.7</td>
</tr>
<tr>
<td>Individual household recycling is the best idea</td>
<td>0.7</td>
</tr>
<tr>
<td>Wastewater should be mixed with underground water</td>
<td>0.7</td>
</tr>
<tr>
<td>Scheme is ok if it helps our water supply</td>
<td>0.7</td>
</tr>
<tr>
<td>Governments should encourage new homes to install water tanks</td>
<td>0.7</td>
</tr>
<tr>
<td>Rather see the management of current water department reviewed</td>
<td>0.7</td>
</tr>
<tr>
<td>Water restrictions should be monitored more</td>
<td>0.7</td>
</tr>
<tr>
<td>There is very little room for error</td>
<td>0.7</td>
</tr>
<tr>
<td>Most people wouldn’t want to drink the water and shouldn’t have to</td>
<td>0.7</td>
</tr>
<tr>
<td>Need more schemes and options</td>
<td>0.7</td>
</tr>
<tr>
<td>Better for the environment than desalination</td>
<td>0.3</td>
</tr>
<tr>
<td>Would buy water</td>
<td>0.3</td>
</tr>
<tr>
<td>Wastewater is currently going to waste</td>
<td>0.3</td>
</tr>
</tbody>
</table>
### Table 9 cont. Other comments

<table>
<thead>
<tr>
<th>Comments</th>
<th>Percentage of Respondents (n=298)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stormwater is currently wasted</td>
<td>0.3</td>
</tr>
<tr>
<td>The scheme is against cultural and spiritual beliefs</td>
<td>0.3</td>
</tr>
<tr>
<td>Need to replace water taken from aquifer</td>
<td>0.3</td>
</tr>
<tr>
<td>Individual wastewater recycling should be subsidised</td>
<td>0.3</td>
</tr>
<tr>
<td>Water is currently not harvested/collected adequately</td>
<td>0.3</td>
</tr>
<tr>
<td>I always conserve water</td>
<td>0.3</td>
</tr>
<tr>
<td>Should be using alternative energy to purify water</td>
<td>0.3</td>
</tr>
<tr>
<td>Water restrictions should continue</td>
<td>0.3</td>
</tr>
<tr>
<td>Need to cut back on water demands</td>
<td>0.3</td>
</tr>
<tr>
<td>Sewerage should be disposed of as it is now</td>
<td>0.3</td>
</tr>
<tr>
<td>Don’t like the idea of grey water in the aquifer</td>
<td>0.3</td>
</tr>
<tr>
<td>Big responsibility</td>
<td>0.3</td>
</tr>
<tr>
<td>This scheme will take too long</td>
<td>0.3</td>
</tr>
<tr>
<td>Everyone should recycle everything</td>
<td>0.3</td>
</tr>
<tr>
<td>Rather have sewerage stored in holding tanks</td>
<td>0.3</td>
</tr>
<tr>
<td>Have tried recycled water and it is ok</td>
<td>0.3</td>
</tr>
<tr>
<td>I drink rainwater</td>
<td>0.3</td>
</tr>
<tr>
<td>Bores and other schemes may use this water before it is treated/filtered</td>
<td>0.3</td>
</tr>
<tr>
<td>Drinking wastewater is a bad thought</td>
<td>0.3</td>
</tr>
<tr>
<td>I trust the experts</td>
<td>0.3</td>
</tr>
<tr>
<td>Should be using river water from the South West</td>
<td>0.3</td>
</tr>
<tr>
<td>The scheme shouldn’t be a political issue</td>
<td>0.3</td>
</tr>
<tr>
<td>Can’t control the scheme for example the time the water takes to filter</td>
<td>0.3</td>
</tr>
</tbody>
</table>