APPENDICES

APPENDIX 3.1

Field Research

Sites visited

Investigations at water reuse sites in New South Wales, Florida and California in 2001 and 2002:

(a) New South Wales, three sites:
Rouse Hill and Sydney Olympic Park in June 2001 and Wagga in January 2002.

(b) Florida, three sites:
Cities of Altamonte Springs and St. Petersburg and Melbourne, Brevard County.

(c) California:
Water Districts – general discussion:
East Bay Municipal Utility District, Oakland
San Francisco
Tour of non potable reuse sites:
City of Newport Beach; Irvine Ranch Water District; Santa Clara Water District, specifically Silicone Valley and San Jose; Monterey Water Pollution Control Agency and surrounding growers fields.
Indirect potable reuse sites:
Sanitation Districts of Los Angeles County, Whittier LA;
Orange County Water District Factory 21 and site of the Groundwater Replenishment System in Fountain Valley

Seminar participation

1. CSIRO Land and Water, "Public involvement and justice in water allocation: some social psychological approaches" Seminar presented by Dr Geoff Syme, July 2000.
2. Water Recycling Australia, Adelaide inaugural conference of the AWA Water Recycling Forum, October 2000.
3. The national "Public Perceptions and Participation in Water Reuse" Symposium in Washington, funded by the Water Environment Research Foundation in cooperation with the National Water Research Institute, American Water Works Association Research Foundation and the WateReuse Association, August 2001.
4. Largo Water Recycling Seminar, Florida, August 2001.
5. Risk Factors in Water: Inputs, Behaviour and Assessment, Prof. Walter Giger, Swiss Federal Institute for Environmental Science and Technology, AWA Adelaide seminar, February 2002.
6. Promoting sustainable private sector participation in the Asian Water industry, Associate Prof. Austin Pullé, The Hawke Institute and the Water Law and Policy Group, June 2002.
7. Paper presented at the World Congress of the International Water Association, April 2002.
8. Presentation given in the United Water Seminar Series, Residential water reuse: observations and anecdotes from America, June 2002.
9. CSIRO Land Water Series, Customer choice in water supply: how reliable and what quality?, Darla Hatton McDonald and Dr. Peter Dillon, SARDI auditorium, July 2002.
10. American Sociological Association annual meeting in Anaheim, California, August 2001.
11. Paper presented at the XV World Congress of Sociology, Brisbane, July 2002.

APPENDIX 3.2

Original letter:
Flinders University Adelaide Social and Behavioural Research Ethics Committee approval to conduct interviews with residents of New Haven and Mawson Lakes housing developments, granted on 23 May 2000

APPENDIX 3.3

Original letter:
Ethics clearance to conduct interviews at the sites at Altamonte Springs and Brevard County, Florida was obtained in June 2001 (Appendix 3.3).

APPENDIX 3.4

20 June 2000

The City Manager
City of Port Adelaide Enfield
PO Box 110
PORT ADELAIDE SA
5015

STATEMENT OF PERMISSION GRANTED

I consent to the issue of a list of New Haven residents being released to June Marks under the terms and conditions outlined in this letter.

……..

Name: _____

Title: _____

Dear Sir

Community and Water Reuse: A Critical Analysis
Case Study: New Haven

Following initial enquiries made through George Lovay, Manager Parks and Gardens, I wish to formally request your permission to access a list of names and addresses of residents who live in the New Haven development.

I am undertaking research into community perceptions of water reuse under a three-year PhD programme. This research has been approved by the Flinders University Social and Behavioural Research Ethics Committee and is a University-Industry based study supported by the Flinders University Departments of Sociology and Environmental Health, United Water International and the SA Housing Trust. The aim of the overall study is to better understand the domestic application of water reuse initiatives.

The first phase of the project was undertaken by an Honours student (Kathy Thomas) who carried out a comprehensive study of both quantity and quality aspects of water reuse at the New Haven site over a six month period in 1999. The quantity aspects of this work are being continued in a year-long assessment of the water balance.

My particular role in this study initially involves interviewing a sample of approximately fifteen residents of New Haven, eight of whom are already participating in the water use monitoring aspects of this research. I will be interested to learn why they chose to live at New Haven and whether they have an interest in the environmental concerns involved in water reuse. Later in the study, a formal survey will be conducted in this and other residential areas.

I would be grateful if you would indicate your consent to the release of the list of residents at New Haven (through George Lovay) by signing the enclosed copy of this letter and forwarding it in the stamped addressed envelope provided. This information will be kept in the strictest confidence and participants will be assured of anonymity in documentation arising from this project.

Further details of this work can be obtained by contacting Maria Zadoroznyj, Department of Sociology (8201 2026; Somz@psy1.ssn.flinders.edu.au) and Dr Nancy Cromar, Department of Environmental Health (8204 3036; Nancy.Cromar@flinders.edu.au).

Yours sincerely

June Marks
PhD candidate
Flinders University Adelaide

APPENDIX 3.5

20 June 2000

Alan Miller
Project Manager
Delfin Management Services Pty Ltd
PO Box 66
SALISBURY SOUTH SA 5106

STATEMENT OF PERMISSION GRANTED
I consent to the issue of a list of Mawson Lakes residents being released to June Marks under the terms and conditions outlined in this letter.
……..
Name: _____
Title: _____

Dear Sir

Community and Water Reuse: A Critical Analysis
Case Studies: New Haven and Mawson lakes

Following initial enquiries made through your office, I wish to formally request your permission to access a list of names and addresses of residents who live in the Mawson Lakes residential development.

I am undertaking research into community perceptions of water reuse under a three-year PhD programme. This research has been approved by the Flinders University Social and Behavioural Research Ethics Committee and is a University-Industry based study supported by the Flinders University Departments of Sociology and Environmental Health, United Water International and the SA Housing Trust. The aim of the overall study is to better understand the domestic application of water reuse initiatives.

The first phase of the project was undertaken by an Honours student (Kathy Thomas) who carried out a comprehensive study of both quantity and quality aspects of water reuse at the New Haven site over a six month period in 1999. The quantity aspects of this work are being continued in a year-long assessment of the water balance.

My role in this study initially involves interviewing a sample of approximately fifteen New Haven residents and ten residents at Mawson Lakes. I will be interested to learn why they chose to live in these eco-village style of developments and whether they have an interest in the environmental concerns involved in water reuse. Later in the study, a formal survey will be conducted in this and other residential areas.

I would be grateful if you would indicate your consent to the release of the list of residents at Mawson Lakes by signing the enclosed copy of this letter and forwarding it in the stamped addressed envelope provided. The list will be obtained through your office and will be kept in the strictest confidence and participants will be assured of anonymity in documentation arising from this project.

Further details of this work can be obtained by contacting Maria Zadoroznyj, Department of Sociology (8201 2026; Somz@psy1.ssn.flinders.edu.au) and Dr Nancy Cromar, Department of Environmental Health (8204 3036; Nancy.Cromar@flinders.edu.au).

Yours sincerely

June Marks
PhD candidate
Flinders University Adelaide

APPENDIX 3.6

Original letter:
From manager of recycled water system at New Haven and statement of permission granted to access a list of residents

APPENDIX 3.7

Original letter:
From manager of recycled water system at Mawson Lakes and statement of permission granted to access a list of residents

APPENDIX 3.8

Confirmation of interview arrangements

[Letter head of Flinders University of South Australia, Department of Sociology]

Date

[Title, name and address of research participant]

Dear [Title and surname as above]

Community and Water Reuse

Further to my enquiry, thank you for agreeing to participate in this research project and, as advised, some documentation is enclosed for your reading prior to our meeting.

Interviews are normally taped because this enables the researcher to converse more informally rather than take notes; the recorder is unobtrusive once the interview proceeds. However, this will not be used if you have any objections to this method of recording. The attached consent form covers the ethics issues around this.

I look forward to meeting you on [day and date] at [residence of research participant] and please contact me before hand if you should have any queries or wish to change the appointment on:
8363 4431 (phone/fax/message)
Email: June.Marks@flinders.edu.au

Yours sincerely

June Marks
PhD candidate, Department of Sociology
Flinders University Adelaide

Enclosures x 3

APPENDIX 3.9

Letter from research supervisor confirming researcher identification

[Letter head of Flinders University of South Australia, Department of Sociology]

Date

[Title, name and address of research participant]

This letter is to introduce June Marks who is a post-graduate student in the Department of Sociology at Flinders University. She will produce her student card, which carries a photograph, as proof of identity.

She is undertaking research leading to the production of a thesis or other publications on the subject of Community and Water Reuse to learn of the experiences, opinions, and ideas of the people who live in residential areas where water recycling is practised. This will be an initial study that will lead to further research on this subject.

June would be most grateful if you would volunteer to spare the time to assist in this project, by granting her an interview that touches upon certain aspects of this topic. The interview will take no longer than one hour.

Be assured that any information provided will be treated in the strictest confidence and none of the participants will be individually identifiable in the resulting thesis, report or other publications. You are, of course, entirely free to discontinue your participation at any time or to decline to answer particular questions.

Since June intends to make a tape recording of the interview, she will seek your consent, on the attached form, to record the interview, to use the recording or a transcription in preparing the thesis, report or other publications, on condition that your name or identity is not revealed, and that the recording will not be made available to any other person. She will transcribe the interview data and the confidentiality of the material will be maintained at all times.

Any enquiries you may have concerning this project should be directed to me at the address given above or by telephone on 8201 2026, fax (8201 3521) or e-mail (Somz@psy1.ssn.flinders.edu.au).

This research project has been approved by the Flinders University Social and Behavioural Research Ethics Committee. The Secretary of this Committee can be contacted on 8201 3513, fax 8201 3756, e-mail Lesley.Wyndram@flinders.edu.au.

Thank you for your attention and assistance.

Yours sincerely,

Maria Zadoroznyj (Dr)
Senior Lecturer
Department of Sociology

Date ……./……/……

APPENDIX 3.10

Information relating to the Research Project
Community and Water Reuse

This project is being conducted jointly through the Department of Sociology and the Department of Environmental Health, Flinders University. It forms the second stage of a University-Industry based research project initiated by the Department of Environmental Health at Flinders University Adelaide in partnership with United Water International.

The study aims to learn from people who live in a residential development that features the recycling of water. This initial work will lead to a more formal study at a later date and it is anticipated that the findings will inform the planning and further development of residential water services.

Interviews will be conducted in an informal manner guided by questions covering some background and matters relating to your experience (if any) of recycled water. You may be asked:

- why you chose to live in this area
- your/your family's participation in sports or leisure activities
- features of your residential area that you may wish to discuss
- particular issues you have identified relating to your area or regarding water recycling

As detailed in the letter of introduction, it is intended to make an audio tape of the interview and you are assured that this will be kept confidential to the researcher and the tape and transcript will be secured in a locked cabinet. Your identity will not be revealed in any documentation arising from this interview. You will be provided with a transcript of the interview for amendment and/or comment.

If you should have any queries relating to this study, you may contact the research Supervisor, Dr. Maria Zadoroznyj, on 8201 2382, by fax (8201 3521) or e-mail (Somz@psy1.ssn.flinders.edu.au). The research officer, June Marks, may be contacted on 8363 4431 (phone/message/fax); email June.Marks@flinders.edu.au.

APPENDIX 3.11

THE FLINDERS UNIVERSITY OF SOUTH AUSTRALIA
Social and Behavioural Research Ethics Committee

CONSENT FORM FOR INTERVIEW

I .....……..

being over the age of 18 years hereby consent to participate in the research project on Community and Water Reuse: A Critical Analysis as outlined in the Flinders University introductory letter.

1. I have read the information provided in the accompanying letter and Information Sheet.
2. Details of procedures and any risks have been explained to my satisfaction.
3. I agree/do not agree to my information and participation being recorded on audio tape.
4. I am aware that I should retain a copy of the Information Sheet and Consent Form for future reference.
5. I understand that:
   - I may not directly benefit from taking part in this research.
   - I am free to withdraw from the project at any time and am free to decline to answer particular questions.
   - While the information gained in this study will be published as explained, I will not be identified, and individual information will remain confidential.
   - Whether I participate or not, or withdraw after participating, will have no effect on any service that is being provided to me.
6. I have had the opportunity to discuss taking part in this research with a family member or friend.

Participant's signature……Date……...

I certify that I have explained the study to the volunteer and consider that she/he understands what is involved and freely consents to participation.

Researcher's signature……..Date…….

I, the participant whose signature appears below, have read a transcript of my participation and agree to its use by the researcher as explained.

Participant's signature……Date……...

APPENDIX 3.12

Letter to respondent: copy of transcript

[Letter head of Flinders University of South Australia, Department of Sociology]

Date

Direct contact details:
[of June Marks]

[Title, name and address of research participant]

Dear [Title and surname as above]

Community and Water Reuse

Thank you again for participating in this research.

I am enclosing the transcript of our interview and would be grateful if you could read through this over the next week. All the interviews are transcribed verbatim and you will appreciate that the spoken word is more casual than the written form – so don't worry if our speech looks sketchy in parts; the meaning is all there. However, if you wish to add or change any text to clarify anything, please do so.

I would appreciate it if you would mail this back to me in the stamped addressed envelope provided at the end of next week and please phone me if you wish to discuss any aspect of the research.

Yours sincerely

June Marks

Enclosures

APPENDIX 3.13

Statement signed by respondent confirming transcript read and approved

Statement acknowledging transcript of interview has been read and amended - provided to research participants at Mawson Lakes following interviews in 2001.

THE FLINDERS UNIVERSITY OF SOUTH AUSTRALIA
Social and Behavioural Research Ethics Committee

Please sign this statement after reading and amending transcript where necessary.

(One declaration/signature will be sufficient if two participants were involved.)

I, ……., whose

signature appears below, have read a transcript of my participation and agree to its use by the researcher as explained.

Participant's signature :…… Date …. /…../01.

A stamped addressed envelope is provided for the return of the transcript.

Thank you again for your participation.

APPENDIX 3.14

Original letter:
Introductory letter from Dr Maria Zadoroznyj: USA field trip.

APPENDIX 3.15

Original letter:
Introductory letter from Dr Nancy Cromar: USA field trip.

APPENDIX 3.16

Interview Guide

Community and Water Reuse

Semi-structured, casual conversation, guided by the following levels of investigation.

Interest in conserving water/the environment

1. Can you tell me why you chose to live in this area?
2. How does this place differ from previous places you have lived in?
3. What are the benefits of living in this place?
4. Is there a sense of community here? Things you have in common with others?
5. Is there anything that is not working as well as you expected in this area?

Personal engagement with water/ values.

6. What type of sports or leisure activities do you participate in?
7. Can you describe the interest you may have in your garden?
8. Are there ways in which water relates to your feelings for life and living? (Explain)
9. Does water represent anything else to you?
10. Are you aware of other people placing special importance on water? Tell me more about this.

Trust in sources of information, salience of environment, water issues

11. Where do you obtain information for news or current affairs? Which papers/ channels/stations/programmes?
12. Would you recount any environmental issues that interest you, or that you know something about.
13. Are you a member of an environmental group?
14. Are you engaged in general recycling of other items, besides water?
15. Do you have a particular interest in water issues?
16. (Any experience of water in other places?)
17. How important are these in relation to other environmental issues - the relationship between them? (eg decrease in discharge of treated effluent into waterways.)
18. Question of trust: (Adapted from Roseth 200:7.)

    Would you score the following agencies between 1 and 10 on how much you trust the following sources of information on water quality or the environment:

Environmental Protection Agency	Water authority	consumer associations
Health Department	Water agency	environmental groups
independent scientists	local council	family and friends
university scientists	medical profession	politicians
	journalists	TV personalities

Experience with recycling of water or for Mawson Lakes, expectations; water conservation

19. What features of water recycling work well/do you think will work best for you?
20. Do you conserve water in other ways?
21. Would you describe your water use as being below average, above average, or average? (Encourage them to qualify/describe what this means to them)
22. Where do you think you use most water inside the home: Bathroom, laundry, toilet, kitchen?
23. Is/Will all your outdoor water use [be] supplied by recycled water?
24. How do you think you/you will personally benefit from recycling water?
25. Are you more or less likely to use water because it is recycled?

26. Can you describe any concerns you may have regarding water and recycling of water?
27. What particular issues are important to you regarding water recycling?
28. How do you feel about being a recycler of water?
29. Are you able to identify reasons why people may be reluctant to recycle water?
30. When and if recycling of water becomes widespread, how much do you think people would be prepared to pay in comparison to mains water?
31. Can you provide any ideas for improvement in this water recycling service/the way the service has been conducted so far?

Attitudes towards levels of water recycling and demand management

32. Question relating to various options for the community to conserve water. (Includes fairness concept. Statements adapted from Roseth 2000:4-5 of Sydney Water to enable comparison with Sydney residents.)

Likert scale: Strongly agree/agree/don't know/disagree/strongly disagree

The community should be educated to save money and use less water
The community should be educated about the long term effects on the environment if water is not conserved.
We should continue to invest in technologies for recycling water for washing cars and watering gardens
We should continue to develop technologies for recycling water for things like showering and washing clothes
We should continue to develop technologies for recycling water for things like cooking and drinking
Business and industry should be required to use less water
Factories should use recycled water
Agricultural crops should use recycled water
Public parks should be watered with recycled water
Another dam should be built
Water restrictions should be imposed on household at all times so that people use less water
Water should be more expensive so that people use less

Demographic data either directly or indirectly supplied.

[Gender]
33. Approx. age
34. Occupation/profession
35. Education - secondary school/post secondary school
36. Do you drink mains water (from the tap), filtered or bottled water?
37. Young children (ages)/other people (ages) who live on the premises or grandchildren who may visit.
38. Pets [exposure to recycled water]

APPENDIX 3.17

Set questions: Florida respondents

No.	Question	Theme explored
1	Would you describe what water generally means to you.	value of water
2	Can you tell me about any concerns you have about water.	salience of concerns
3	Do you drink water from the tap, filter, or bottled.	value/concerns
4	Do you think you use more water for the garden because it is reclaimed.	value/ conservation
5	Do you use reclaimed water for washing the car or any other purpose.	reclaimed applications /risk awareness
6	What are the benefits to you of reclaimed water	benefits/value
7	Are you aware that reclaimed water is highly treated waste water/sewage effluent	risk awareness/ source
8	Can you describe any concerns you may have about reclaimed water	risk awareness/ concerns
9	Can you think of any reasons why others may be reluctant to recycle water	risk awareness/ reluctance
10	Would you please give a score between 1 and 10 on how much you trust information on water quality or the environment given by five different agencies: 10 being they are totally trustworthy.	trust in reclaimed water provider and associated agents
10.1	EPA	
10.2	Health Department	
10.3	Independent scientists	
10.4	City of Altamonte Springs government	
10.5	Environment Groups	
11	Can you provide ideas of how to improve the reclaimed water service	reclaimed water/ improvements/risk
12	Considering ways to conserve more water, please tell me whether you strongly agree, agree, don't know, disagree, or strongly disagree to the following:	
12.1	The community should be educated about the long term effects on the environment if water is not conserved	value of water/ conservation
12.2	Technologies should be developed for recycling water for washing clothes and showering	reclaimed water/ potable applications
12.3	Technologies should be developed for recycling water for cooking and drinking	
12.4	Business and industry should be required to use less water	value/conservation
12.5	Water should be more expensive so that people use less	
13	Could I just ask your approximate age	demographics
14	Your occupation or profession	
15	Do you have young children (visit – if older)	
15.1	Do you have any concerns about your children/children visiting and recycled water	risk/children
16	Do you have any pets	risk/pets
16.1	Do pets drink the reclaimed water.	

Research reviewed by William Bruvold (1985, 1988): Acceptance of using recycled water for drinking

Researcher:	*1971 Kasperson et al*	*1972 Bruvold*	*1973 Gallup*	*1973 Stone & Kahle*	*1973 Carley*	*1979 Olson et al*	*1979 Bruvold & Crook*	*1981 Bruvold*	*1983 Milliken & Lohman*	*1985 Lohman & Milliken*
Target population	USA 5 cities	California 10 cities	USA	California 10 cities	Denver Colorado	California Anaheim & Irvine	California 10 cities not same as 1972	California Irvine	Denver Colorado	Denver Colorado
Selection method	Probability	Random, multistage cluster	Probability	Random	Random	Random	Random, multistage, quota for gender & age	Random, multistage, quota for gender & age	Random	Random
Final sample size	400	972	2927	1000	447	244 24% response rate	1400	140	399	403 not the same sample as 1983
Survey type	No detail	Face to face	Telephone	Telephone	Face-to-face	Mail 1000	No detail	No detail	Telephone	Telephone
Question frame	Positive	Neutral	Negative	Neutral	Positive	Neutral	Neutral	Neutral	Neutral	Neutral
Response options	5 point scale	Dichotomous	No detail	10 point scale	No detail	Dichotomous	Thurstone 11 point scale	Thurstone 11 point scale	Dichotomous	Dichotomous
Favour drinking	48%	44%	38%	39%	49%	46%	26%	28%	32%*	29%

*Estimated based on opposition only given by Bruvold (1981:46), being 67% compared to 63% in 1983 where percentage in favour is 32%.

Survey research on potable reuse conducted in California 1993 to 2000

Study initiated by:	*1993 San Diego County Water Authority.*	*1995 San Francisco Public Works and Water Dept.*	*1996 Monterey Regional Water Pollution Control Agency*	*1997 Orange County Water & Sanitation*	*1998 San Diego City*	*1999 San Jose*	*2000 OCWD & OCSD as for 1997*	*2000 County Sanitation Districts of Los Angeles*	*2000 MRWPCA as for 1996*
Researcher	SD State University Katz & Assoc.	SF State University, Berkeley	Milestones Planning	Lawrence Marketing	Decision Research	Not stated for Santa Clara Water District	Lawrence Marketing	Lawrence Marketing	Milestones Planning
Target population	City res. not incl. NESB	SF including NESB	MWPCA customers	County voters	City voters	San Jose & surrounds	County voters	Registered voters	MWPCA customers
Selection method	Random digit dial	Random digit dial	Random cluster.	not mentioned	Random	Random	no mention	no mention	Random cluster
Sample size	315 (± 6% @ confidence level not quoted)	600; 56% response rate ± 4% @ 95%	602; 30% response rate	500	500 database Decis'n Rsch	400 (± 4.9% @ 95% confidence level)	500	300	584; 30% response rate
Survey Type	Telephone	Telephone	Mailed	Telephone	Telephone	Telephone	Telephone	Telephone	Telephone
Policy question frame	repurify meet, exceed drink quality standards/stored	to replenish aquifers	drink standard replenish ground water	short n=245 long 255	sophisticated purification description	before info/ after detailed information	short n=250 long 250.	percolation ponds described	replenish groundwater
Response options	Dichotomous	Likert 5 pt scale	Dichotomous[1]	Likert 5 pt	Dichotomous	Likert 5 pt scale	Likert 5 pt	Likert 5 pt	Dichotomous[1]
Favour policy	73%; 70%	39%	46% 2	51%; 65%[3]	60%	50%; 49%	51%; 67%[3]	65%	46%2
Drink question frame	Not stored/ blended and stored	add to drinking water		Really is toilet to tap n=500	Info need to know to drink (-)	Whether appropriate use	Toilet-tap/ Jones M/nature	Toilet to tap Jones M/nature	
Response options	Dichotomous[1]			Likert 5 pt	Open ended	+10 to –10 rating	Likert 5 pt	Likert 5 pt	
Favour drinking	48%; 59%	16%		37%	5% (not used)[4]	-2.9 (not used in Figure 4.3)	39%; 47%	38%	

[1] Responses: No, maybe, yes, don't know, giving unbalanced available responses. Therefore, maybe and don't know are aggregated for this comparison.
[2] Monterey reported valid % and all percentages have been recalculated from the data to include missing and don't knows for comparison.
[3] The 500 sample was split for this question only, in 1997 and 2000.
[4] Not included in figure 4.3, as question is so different from comparators.

Note that the confidence levels reported by researchers do not refer to specific binomial percentage responses, and therefore are a guide only.

Survey research on potable reuse conducted outside California 1988 to 2000

Study initiated by:	*1988 Gold Coast City Council, Qld*	*1991 Univ. of Qld, Aust Water Rsch Advis Cncl, Gold Cst City Cncl*	*1993 Noosa Shire, Qld.*	*1995 Sydney, NSW Sydney Water*	*1995 Tampa SWFWMD*	*1996 Tampa Cities, West Coast Region W Supply Ath*	*1997 San Antonio Texas Masters thesis*	*1999 Sydney. Sydney Water*	*1999 Perth WA Water Corporation*	*1999 Thames Water Utilities*	*2000 Arizona Mncpl Water Users Assoc Texas*
Researcher	Gold Coast City Council	Hamilton, G. Universtiy of Qld.	Nexus Australia	Sydney Water	S/W Florida Water Managmnt. District	Decision Strategies Group	Michele Foss	Sydney Water	Syme & Nancarrow, ARCWS*	Sample Surveys	Lawrence Research
Target population	Gold Coast rate payers	6 centres in Qld. and 1 in NSW	All rate payers in Council area	Customers	District heads of households	County public Pinellas, Pasco Hillsborough	Shoppers 4 malls San Antonio	Customers greater Sydney	Perth house-holders	Adult households	Counties Maricopa & Prima
Selection method	Not stated.	Not stated.	Random	Random	Random	Random	conven-ience	Random	Random stratified	Random	Random
Sample size	1,508, 13% response rate	4,944 sent, 1066 return, 21.5% response rate	1632 10% response rate.	1,000; 500 two weeks later	1093 (± 2.7 at 95% confidence level	1002 (± 3% @ 95% conf. level)	42 86% response rate	1,300, incl 400 more info on wtr-recycling	662	1068, (± 4% @ 90% conf. level)	300
Survey Type	Mailed	Mailed	Mailed Newsletter	Telephone	Telephone	Telephone	Q'naire	Telephone	Personal interview	Telephone	Telephone
Policy question frame			discharged to dam; direct potable		If indirect potable reuse was appealing.	build system blend repurified water				indirect potable; direct potable	allow to percolate into ground.
Response options			alternative plans x 4		Not known	Likert 5 pt				Likert 7 pt	Likert 5 pt
Favour policy			6.5%; 38%		51%	46%				65%; 63%	74%
Drink question frame	Waste-water should be recycled: drinking	If safe; if no health risks HM pay; how feel purified for drink-w		Favour or oppose reused water for drinking		How acceptable is repurified as water source your home	Accept drink; if mixed other sources	What extent favour or oppose use for drinking	Accept range of uses, approv. drink	Drink from tap planned indirect; direct potable	Toilet to tap, Jones – speed up Mother Nature
Response options	Not stated.	3,4, and 5 pt scales.		Likert 4 pt		Likert 5 pt	Likert 5 pt scale	Likert 4 pt	Likert 5 pt scale	Dichotom. yes/no/dk	Likert 5 pt
Favour drink	13.3%	20%		27%; 23%		42%	43%,52%	26%	16%	55%; 51%	51%

*Australian Research Centre for Water in Society, CSIRO Urban Water Program, CSIRO Land and Water.

California Surveys: Policy Questions

Survey	Policy Question
1993 San Diego	Support or oppose water repurification that would purify used water to "meet or exceed" existing drinking water quality standards. (Not verbatim but as quoted in the report.)
San Diego Stored	As above and if the repurified water were blended with existing imported water and stored for a year before use. (Not verbatim but as quoted in the report.)
1995 San Francisco	Previously explained: sewer water plus better treatment of recycled water … Will read possible uses of recycled water. These uses are not part of the proposed plan. Some people support these additional uses, others oppose them. … to replenish aquifers.
1996 & 2000 Monterey	Possible to treat wastewater (water flushed from homes and businesses) so that it meets drinking water quality standards … Would you favour the use of treated wastewater for ea. of the following? /ground water aquifer replenishment.
1997 Orange County	Treated wastewater that is now discharged into the ocean will receive additional treatment to remove impurities and will then be pumped to basins where it will be allowed to settle into our underground water reservoirs.
OC Long description	At the present time, our sewage and wastewater flow to a sewage treatment plant where it is treated and then discharged into the ocean. Under this proposed project instead of discharging this water into the ocean, it will be further treated through a sophisticated, advanced water treatment process that will include microfiltration, reverse osmosis and disinfection. The first stage uses a series of microscopically fine filters to remove impurities. The water is further cleansed by reverse osmosis, which is the same process used by bottled water companies. Then the water is disinfected. After these treatments, the water will be pumped into basins where it will be allowed to settle into our underground water reservoirs, a natural filtration process similar to the rainwater cycle.
1998 San Diego	How water repurification works: it takes reclaimed water – that is, wastewater that has been treated to a level suitable for irrigation, then puts it through a sophisticated filtration and purification process, and put back in storage reservoirs to blend with raw water supply. It is then used for landscaping, bathing, cooking, an drinking. Generally speaking, do you think repurifying waste water is a good or not a good idea for San Diego?
1999 San Jose	Wastewater is "recycled by putting it through a sophisticated chemical and biological clean-up and filtration process to remove impurities and contaminants". Eventually some of the purified wastewater would end up in the region's underground drinking water supply.
SJ after more details.	Multiple benefits and disbenefits stated if recycling not pursued along with assurances of safety (eg easily meet state and federal standards) and that purification has been practised in LA/Orange Counties and elsewhere for 20 years.
2000 OC	As for 1997 except "sewer water"
long	As for 1997 except "our sewage flows" … "disinfected using ultra-violet light".
2000 Los Angeles	With this process, wastewater is treated to remove organic material and is then disinfected. The water is then pumped to infiltration basins that have sand and gravel bottoms that allow water to percolate into the ground. The soil and helpful natural micro-organisms provide additional treatment and filtration. The water is stored in the underground basin until it is pumped out for drinking and other household purposes.

Responses to potable reuse policy and drink questions: California

	Favour		Oppose		Unsure, n/a		Totals	
	n	%	n	%	n	%	n	%
Policy								
93 SD	230	73.0	56	17.8	29	9.2	315	100
SD stored	221	70.2	65	20.6	29	9.2	315	100
95 SF	236	39.3	261	43.5	103	17.2	600	100
96 Mtry	278	46.2	120	19.9	204	33.9	602	100
97 OC	126	51.4	98	40.0	21	8.6	245	100
OC long	166	65.1	54	21.2	35	13.7	255	100
98 SD	300	60.0	175	35.0	25	5.0	500	100
99 SJ	200	50.0	168	42.0	32	8.0	400	100
SJ expl	196	49.0	176	44.0	28	7.0	400	100
00 OC	127	50.8	89	35.6	34	13.6	250	100
OC long	168	67.2	65	26.0	17	6.8	250	100
LA	195	65.0	90	30.0	15	5.0	300	100
Mtry	269	46.1	122	20.9	193	33.0	584	100
Mean:		56.4						
Median:		51.4						
Drink								
93 SD	152	48.3	28	8.9	135	42.9	315	100
SD stored	187	59.4	11	3.5	117	37.1	315	100
95 SF	95	15.8	479	79.8	26	4.3	600	100
97 OC t-t	184	36.8	268	53.6	48	9.6	500	100
00 OC t-t	197	39.4	274	54.8	29	5.8	500	100
OC Jones	234	46.8	238	47.6	28	5.6	500	100
LA Jones	114	38.0	171	57.0	15	5.0	300	100
Mean:		40.6						
Median:		39.4						

Notes:

1. Frequencies were not reported for individual responses for 98 San Diego, San Jose, Los Angeles; these were caluclated from the percentages and total respondents given.
2. "Maybe" category for 93 San Diego drink responses and Monterey 97 and 00 policy responses are included in "unsure".

California Surveys: Drink questions for potable reuse

Survey	Questions on using the water for drinking
1993 San Diego	… support or oppose water repurification that would purify used water to "meet or exceed" existing drinking water quality standards. Would you use this water to wash dishes; cook; drink. (Note: describes direct rather than indirect potable reuse.)
If stored	As above … if repurified water were blended with existing imported water and stored for a year before use? (Indirect potable reuse)
1995 San Francisco	Explained earlier in survey: sewer water plus better treatment of recycled water … Will read possible uses of recycled water. These uses are not part of the proposed plan. Some people support these additional uses, others oppose them. … add to drinking water supplies.
1997 OC toilet to tap	I just have a hard time with reclaimed water because it really does go from toilet to tap. (Negative response suggests acceptance for drinking.)
1998 SD not shown	And what would you personally need to know to make you confident in using repurified water for purposes including drinking water? (Accept two responses) Only 5% said they were convinced and do not need more information. (This result not compared with others in Figure 4.3.)
2000 OC toilet to tap	I just have a hard time with purified sewer water because it really does go from toilet to tap. (Negative suggests acceptance for drinking.)
toilet to tap Jones	Smith does not like the idea of treating sewer water and putting it back into the same underground aquifer that we use for drinking water. He is uncomfortable because it really is a toilet-to-tap process. Jones is not bothered by this process because the sewer water goes through an extensive purification process, similar to bottled water, and results in water that is of higher quality than tap water. He says all water has been used before anyway and if we can speed up Mother Nature, why not do it? Strongly/somewhat like Smith; Somewhat/strongly like Jones. (Jones = will drink)
2000 LA toilet to tap Jones	Smith does not like the idea of treating wastewater and putting it back into the same underground aquifer that we use for drinking water. He is uncomfortable because it really is a toilet-to-tap process. Jones is not bothered by this process. He says all water has been used before anyway and if we can speed up Mother nature, why not do it? Strongly/somewhat like Smith; Somewhat/strongly like Jones. (Jones = will drink)

Surveys USA, UK and Australia: Policy questions

Survey	Policy Questions
1993 Noosa and Noosa Direct	To choose one of four options: (Indirect potable reuse involves returning highly treated effluent to the supply dam which is known to be highly eutrophic, therefore this option was not recommended by the engineering consultant.) Indirect potable reuse, land disposal, disposal to Burgess Creek, direct potable reuse.
1995 Tampa	Whether indirect potable reuse was appealing.
1996 Tampa	Repurified water starts with wastewater from your home. It is treated two times, before it is blended back into natural systems, like rivers. Later this blend is treated a third time at the water treatment plant before being sent to homes. To what extent would you favour or oppose a plan for water agencies in the Tampa Bay area to build a system that would blend repurified water with your existing water supply? Strongly favour, favour, oppose, strongly oppose, don't know.
1999 UK	Under this option wastewater would be treated at the sewage works and put into rivers as it is now. However it would be taken back out of the rivers for purification at water treatment works within a few days rather than weeks or months, so the water would spend less time in rivers before being reused. This means less will be lost back to the environment. Thinking about this option where water is reused after it has been in the rivers for just a few days, do you think that this is an acceptable way of preventing water shortages in the future? (Yes/No then asked how acceptable or not acceptable in the manner below) Extremely acceptable, very acceptable, fairly acceptable (if yes) Extremely unacceptable, very unacceptable, fairly unacceptable (if no)
1999 UK Direct	Under this option treated wastewater from the sewage works would not be returned to the river as it is now. It would go directly to the water treatment works for immediate purification and reuse. So the water would spend no time in rivers before being reused. This means very little would be lost back to the environment. Thinking about this option where water is reused without it ever going back into the rivers, do you think that this is an acceptable way of preventing water shortages in the future? Yes/No Respondents asked how acceptable or not acceptable in the manner below: Extremely acceptable, very acceptable, fairly acceptable (if yes) Extremely unacceptable, very unacceptable, fairly unacceptable (if no)
2000 Arizona	With this process, wastewater is treated to remove organic material and is then disinfected. The water is then pumped to infiltration basins that have sand and gravel bottoms that allow water to percolate into the ground. The soil and helpful natural micro-organisms provide additional treatment and filtration. The water is stored in the underground basin until it is pumped out for drinking and other household purposes. To what extent do you approve or disapprove of this process? Strongly/somewhat approve, somewhat/strongly disapprove, don't know.

Responses to potable reuse policy and drink questions: Outside California

	Favour		Oppose		Unsure, n/a		Totals	
	n	%	n	%	n	%	n	%
Policy								
93 Noosa	106	6.5					1632	6.5
93 Noosa direct	627	38.4					1632	38.4
95 Tampa	557	51.0					1093	51
96 Tampa	461	46.0	531	53.0	10	1	1002	100
99 UK	706	65.0	217	20.0	163	15.0	1086	100
99 UK direct	684	63.0	228	21.0	174	16.0	1086	100
00 Arizona	222	74.0	66	22.0	12	4.0	300	100
Mean		49.1						
Median		51.0						
Drink								
88 Gold C	201	13.3	866	57.4	442	29.3	1508	100
91 Qld NSW		20.0		75.0		5.0		100
95 Sydney	270	27.0					1000	27
95 Syd 2 wks	115	23.0					500	23
96 Tampa	421	42.0	581	58.0			1002	100
97 San Antonio	22	52.0					42	52
San Ant Direct	18	43.0					42	43
99 Sydney	338	26.0					1300	26
99 Perth	105	15.8	491	73.8	70	10.5	666	100
99 UK	597	55.0	424	39.0	65	6.0	1086	100
99 UK direct	554	51.0	489	45.0	43	4.0	1086	100
00 Arizona	153	51.0	129	43.0	18	6.0	300	100
Mean:		34.9						
Median:		34.5						

Notes:

1. Noosa and Noosa direct are responses to the same question listing several options.
2. Sydney, San Antonio and 95 Tampa surveys: only positive responses reported.
3. Percentages used for Gold Coast and 1991 Q'ld/NSW surveys are as published in Hamilton & Greenfield (1996:505-506); the 1991 results rounded up 1% pt for acceptance from Hamilton (1991).
4. Whole percentages reported for most surveys. UK Drink unsure required adjustment.

APPENDIX 4.9

Surveys USA, UK and Australia: Drink questions for potable reuse

Survey	Questions on using the water for drinking
1998 Gold Coast Qld	Wastewater should be recycled for drinking. Strongly agree, agree, disagree, strongly disagree. don't know
1991 Qld NSW	Attitude towards use of reclaimed water for supplementing drinking water supply. Cross correlated frequencies: highest level of support across three questions. Q5. Acceptance of respected scientific organization findings that purified wastewater is safe; Q6. If true no health risks, how much cheaper before accept its introduction; Q7.How do you feel about total re-use of purified wastewater throughout Australia (Hamilton 1991).
1995 Sydney	One way to save water is to take water from the sewage system, that is, water from toilets, bathrooms, kitchens and factories and use it again. This water is treated to meet all the health and safety standards. Would you favour or oppose the use of recycled water for the following purposes … (Statements on remote uses to greater contact and consumption given) … drinking. Strongly agree; agree (negative responses/don't know not reported)
1996 Tampa	Repurified water starts with wastewater from your home. It is treated two times, before it is blended back into natural systems, like rivers. Later this blend is treated a third time at the water treatment plant before being sent to homes. How acceptable or unacceptable is repurified water as a water source for your home? Very/acceptable, unacceptable, very unacceptable
1997 San Antonio	No verbatim details given. Respondents presented "with a list of potential uses of recycled water (some currently in use around the state and within San Antonio), and requested interviewees to rank the items from most desirable to least desirable according to personal preference for potable and/or contact use." Desirability for drinking; then response if blended with other waters.
1999 Sydney	Following the same description as for 1995: To what extent do you favour or oppose the use of recycled water for the following purposes … (remote uses to greater contact and consumption given) … drinking. Strongly favour, favour (negative responses/don't know not reported)
1999 Perth	Respondents indicated acceptability to reuse stormwater, then wastewater for a range of uses: reuse wastewater that has been treated to approved health standards for drinking. Acceptable (other responses not quoted)
1999 UK and UK Direct	If your water was supplied in this way (as described under policy questions) would you drink it straight from the tap (without filtering it yourself first)? Same question put after describing the policy questions above for indirect and direct potable reuse. Responses: Yes/No Negative responses were then asked what they would generally do instead (probes used: buy bottled water, use a jug filter, use a household filtering system, would not drink water, other, don't know).
2000 Arizona	Smith does not like the idea of treating wastewater and putting it back into the same underground aquifer that we use for drinking water. He is uncomfortable because it really is a toilet-to-tap process. Jones is not bothered by this process. He says all water has been used before anyway and if we can speed up Mother nature, why not do it? Strongly like Smith, somewhat like Smith, somewhat like Jones, strongly like Jones, don't know. (like Jones = will drink)

Support for potable reuse as a function of demographics: California

	San Diego 1993		San Francisco	Orange County 1997 (policy)		Orange County 2000 (policy)		San Jose	
	favour (policy)	favour (drink)	oppose	favour	oppose	favour	oppose	favour	oppose
	73%	59%	44%	58%	31%	59%	31%	50%	42%
Gender									
Men	more than	stat. signf.		**67**	23	**66**	26	54	
Women	women			49	39	53	36		
Age									
18-24			all demog.	**83**	13	**78**	20		
25-34			sub-groups	55	35	58	31	< 34 56%	
35-44	less than 40 yrs		opposed	58	36	58	35		women
45-54				60	35	63	27		50+ 56%;
55-64				62	27	55	31		and all
65+				53	28	54	34		50-64
Occupation									50%
Blue collar	stat. signf.								
Home mkr	tendency but								
	only 5% sample								
Education									
HS or less			less educated	56	33	57	35		
Some college			more	59	33	52	39		
College grad			opposed	**64**	27	**66**	24		
Post grad		higher educ.		50	35	59	30	60	
Income									
30-50K				**70**	22	**68**	26	$50-70K	$40-50K
50-75K	none			56	38	54	24	58%	57%
75K+				**67**	25	60	32		
Aware									
Yes & favour				**84**	11				
Yes & oppose	none			38	62				
Not aware				55	32				
Yes no opinion				58	25				

Note: Whole sample results for Orange County represent short and long description sub-samples.

Support for potable reuse as a function of other demographics and behaviour: California

	San Diego 1993		SF Policy	OC 1997 (policy)		OC 2000 (policy)		San Jose	
	favour (policy)	favour (drink)	Opp	favour	oppose	favour	oppose	favour	oppose
	73%	59%	44%	58%	31%	59%	31%	50%	42%
Location									
North				60	31	57	35		
Central			all opposed	53	35	54	35	outer city	
South				**63**	26	**66**	24	55	
Ethnicity			Asians & Pacific Islanders more opposed					Asians 60	Latinos 58
Political									
Republicans	stat. signif.	stat. signif.		57	33	61	31		
Democrats	more opposed			**67**	24	60	32		
Independents				61	27	60	26		
No registered								64	
Willingness to pay									
Yes $2				59	31				
Yes $5				**69**	27	data not collected			
Yes $10				**82**	10				
No to $2				40	**48**				
No opinion				57	21				
Drink									
Tap		stat. signif.		**64**	24	**64**	22		
Filtered				**61**	31	**62**	32		
Bottled				54	36	53	37		

Note: Whole sample results for Orange County represent short and long description sub-samples.

Support for potable reuse as a function of beliefs and attitudes: 1997 Orange County

	n	%	favour system 58%	oppose system 31%
Main concerns about water				
Supply: Will there be enough?	86	17.2	**66.3**	23.3
Safety/health	202	40.4	**52.0**	**39.1**
Taste	57	11.4	63.2	24.6
No opinion/other	155	31.0	60.6	25.2
Total	500	100.0		
Water supply				
Have enough water	111	22.0	59.5	30.6
Must develop or find new souce	295	59.0	**63.4**	28.1
No opinion	94	19.0	41.5	37.2
Total	500	100		
Growth in population will force rely on r/w whether like/not				
Strongly agree	160	32	**71.3**	20.6
Somewhat agree	149	30	**64.4**	22.8
Somewhat disagree	81	16	42.0	**50.6**
Strongly disagree	63	13	42.9	**47.6**
No opinion	47	9	42.6	14.9
Total	500	100		
How feel reclaim. for drinking				
Tech ok, worry about administers	170	34	**68.2**	22.4
Administer ok, worry about tech	171	34	53.2	**39.2**
Volunteered: worry about both	66	13	45.5	40.9
No opinion	93	19	60.2	21.5
Total	500	100		
Best tech can't rmv impurities				
Strongly agree	175	35	49.1	**44.0**
Somewhat agree	154	31	63.0	24.0
Somewhat disagree	66	13	**69.7**	27.3
Strongly disagree	58	12	**74.1**	19.0
No opinion	47	9	46.8	19.1
Total	500	100		

Note: Whole sample results represent short and long description sub-samples.

Support for potable reuse as a function of beliefs and attitudes: 1997 Orange County

	n	%	favour system 58%	oppose system 31%
Tech is same M Nature - faster				
Strongly agree	85	17	**81.2**	11.8
Somewhat agree	152	30	**66.4**	23.7
Somewhat disagree	102	20	52.0	**41.2**
Strongly disagree	81	16	49.4	**42.0**
No opinion	80	16	38.8	37.5
Total	500	99		
System will deteriorate over time				
Strongly agree	100	20	48.0	49.0
Somewhat agree	124	25	58.1	27.4
Somewhat disagree	115	23	**64.3**	27.8
Strongly disagree	75	15	**77.3**	16.0
No opinion	86	17	45.3	29.1
Total	500	100		
Impression reverse osmosis				
Strongly favourable	131	26.2	**70.2**	22.9
Somewhat favourable	114	22.8	**68.4**	23.7
Somewhat unfavourable	32	6.4	34.4	**53.1**
Strongly unfavourable	26	5.2	42.3	**50.0**
Heard/no opinion	75	15	50.7	33.3
Not heard	122	24.4	52.5	32.8
	500	100		
Reclaim & purifying not perfect but best way to increase supply				
Strongly agree	141	28	**77.3**	14.2
Somewhat agree	162	32	**63.6**	23.5
Somewhat disagree	83	17	38.6	**55.4**
Strongly disagree	62	13	33.9	**54.8**
No opinion	52	10	50.0	26.9
Total	500	100		
Everything we eat & drink has some impurities in it				
Strongly agree	291	58	**64.3**	27.8
Somewhat agree	142	28	50.7	33.8
Somewhat disagree	31	6	54.8	35.5
Strongly disagree	18	4	44.4	**50.0**
No opinion	18	4	38.9	16.7
Total	500	100		

Note: Whole sample results represent short and long description sub-samples.

Orange County: Summary Reasons for response to potable reuse

1997 and 2000 surveys short and long descriptions

One or more reasons why favour/oppose	% Favour		% Oppose	
	1997	2000	1997	2000
	n=377	n=355	n=174	n=187
Positive comments				
Environment: not polluting	5.6	16.6		
Recycle value	4.2	4.8		
Supply: needed/growth	22.5	25.9		
Conserves water	17.2	5.6		
Technology trusted/safe	19.6	19.4	0.6	0.5
Good idea	2.4	2.3		
Improves quality of tap water	4.8	1.7		
Trust those responsible	0.5	0.8		
Cost is effective	3.2	3.7		
Favour, although oppose			0.6	
Total positive comments	80.1	80.8	1.1	0.5
Don't know	1.3	2.0	2.3	0.5
No comment, indecipherable	2.1	2.0	4.0	1.1
Negative comments				
Environment: contamination	0.5			0.5
Supply, query the need	1.6	3.1	4.0	1.6
Technology: don't trust/unsure	5.8	1.1	35.6	35.3
There are other alternatives	2.9	0.8	6.3	4.8
Sewage source	0.8	2.5	28.2	42.8
Need strict testing/guidelines	0.5	1.1	0.6	0.5
Need more information	2.4	3.9	3.4	5.9
Distrust those responsible			1.1	
Distrust maint. tech / quality	0.3	0.6	1.7	2.7
Cost	1.6	1.4	11.5	3.7
Oppose, although favour		0.6		
Total negative comments	16.4	15.2	92.5	97.9
Totals	100.0	100.0	100.0	100.0

1999 San Jose: Main reasons for supporting or opposing groundwater recharge

Responses	%
Reasons favour	
good to recycle/need to save water/in case of drought, we would still have water resource	42
if it really is purified and clean	18
water should be purified after that amount of time	15
should be okay to drink if it meets government standards	12
	87
Reasons oppose	
don't think it would be safe	32
water will never be pure enough to drink	26
need more research on risks and accident prevention	16
can't trust government or government standards	14
	88

1999 UK: Themes identified in open ended response
Summaries for indirect and direct potable reuse

Reasons option is unacceptable	% indirect	% direct
Technology		
not enough time/water should be left longer	8	4
tap water unclean/polluted/contaminated with chemicals	4	8
water should be left to naturally purify/filter	3	6
depends on how clean/purified water is	3	2
will affect/lower the quality/standard	3	3
will be OK if water meets certain standard/requirements/ drinkable	3	2
treatment/purification needs monitoring/regulated/safe guards	2	2
chemicals/extra chemicals will have to be used for purification		3
may be a health risk		2
Sub Total:	26	32
Environment		
will affect/lower water levels/dry out rivers	4	5
may affect/damage the environment	4	4
water companies take too much from rivers/shouldn't take so much	2	
rivers will become polluted/dirty	2	
it may kill fish/damage wildlife	2	
Sub Total:	14	9
Miscellaneous		
do not like this option/bad idea		2
will be expensive/increase costs		2
I do not have enough knowledge/information	3	3
Sub Total:	3	7
Total:	43%	48%

1995 San Francisco: Likes and dislikes - non potable reuse

	f	%
What, if anything, do you most like:		
will protect the environment	59	**10**
will prepare for drought, dry years	56	9
will be efficient, cost-effective, save money	86	**14**
general, good idea to recycle, conserve water	231	**39**
other	121	20
don't know	47	8
	600	100
What, if anything, do you most dislike		
will damage the environment (Bay/ocean)	7	1
will cost too much (expansion, treatment)	72	12
will be unsafe, hazardous	210	**35**
can't trust government agencies	35	6
other	81	14
don't know	195	33
	600	100

Orange County: Sample categorisation of reaons given for accepting potable reuse - short description 1997 survey

	Tech.	Supply	Conserve	Recycle	Cost
Natural proces, must be done	1	1			
short on water		1			
runing out, not fair take elsewhere		1	1		
Instead wasting it, need more		1	1		
If run out we'll need it					
Other needs than drinking					
need more		1			
need the water, **if** it works		1			
have to, cost less		1			1
possibly run out, future		1			
more water, better for ocean		1			
need it in long run		1			
so won't run out, store up		1			
need water		1			
to give everyone water		1			
If it done right, use when run out		1			
need more, **as long as** purified					
more water avail, salt water out		1			
so water not wasted, helps **if** need			1		
If process works, current water gross					
need clean water, lot wasted		1	1		
need water, settle in w/table will be usable	1	1			
need for growth		1			
need stop wasting			1		
save water we have, so don't run out		1	1		
helpful to recycle, never know when run out		1	1		
give us water needed, alternative source	1	1			
Too many coming to California		1			
Repurifying so more for population growth	1	1			
we are going to need water		1			
more water, looking out for future		1			
way of having enough water		1			
population growth		1			
need more water		1			
lack of supply, wasting it in ocean		1	1		
put back into system			1		
help preserve water			1		
anything to conserve is fine			1		
able to reuse water now going to waste			1		
recycling is good				1	
need to do everything we can to reclaim			1		
we should reuse water, and its safe	1		1		
wise use of water instead letting runoff			1		
wasted to ocean			1		
conservation of water			1		
increases amount we can consume		1			
doesn't waste any water			1		

APPENDIX 4.15

Sample of responses to Orange County potable system: source category

Favour	Oppose
like purified water, don't like idea recycled	all of the waste we dump into the ocean
that water has already been used	I don't want to use sewage or dirty water
	it's waste water
	it's sewer water
	I don't want to drink shit/ unclean water
	I don't like the idea of drinking that water
	it just sounds bad/ I don't want to be drinking it
	should use storm water, not waste water
	I don't like the idea of drinking sewage water
	10 yrs not enough data tell consequences
	not sure of its use before, its purity
	it's unhealthy
	it just doesn't sound healthy
	do not think the water is healthy
	environ study costs, water crappy as it is
	if recycle it is toxic, wouldn't want to drink it
	I like purified water
	don't like recycled water idea
	we're just using same water, not good at all
	don't want to drink reclaimed water
	don't like idea of recycled water
	don't think its right, enough water for everyone
	doesn't sound too good
	doesn't sound good, should just go to the ocean
	it's gross
	it just sounds gross
	don't know much about it, just doesn't sound good
	don’t like the sound of it
	it sounds yucky
	it is disgusting
	I don't like the idea

1997 Responses to Orange County potable system long description

not sold using sewage,	goes from toilet to the tap
no filtration will get all germs	cost, don't feel right drinking that kind of water
	can't imagine bieng able to cleanse sewage
	look at the dirty water, never thought purify to drink
	its waste water, too much sewage
	sewage is disgusting, need to get rid bacteria, germs
	don't like idea of raw sewage
	people put too many poisons down their drains
	the cost, don't want to drink it even after treatment
	should go into sea, don't want to drink purified sewage
	don't like reclaimed, not get impurities to make safe
	don't think that type of water completely safe drink
	don't think safe to drink even after tech used to clean it
	organisms that won't disappear in reclaimed
	it does not sound sanitary
	I'm just not comfortable
	It makes me sick

APPENDIX 6.1

New Haven Research Participants

Invw. yr NH	*Fictitious Names*	*Age*	*Employ. status*	*Occupation Children*	*Housing: style & garden (G)*	*Observed outlook*
1 4 yrs	Tom & Wanda	69 70	Retired	Retail business owners	2-storey well appoint. Lawn, G courtyard	Positive, energetic, future oriented.
2 2 yrs	Noel & Catherine	65 65	Retired	Corporate mgr/ Retailer	2 storey well appoint. G, large	Active, enjoying retired life style, use public transport.
3 4 yrs	David & Rhonda	70 63	Retired	STP operator/ Tertiary student	2-storey small G, lush, hanging.	As above. Coord.[1] conveys knowledge of technology
4 2 yrs	Bernard & Karen	71 67	Retired	Production Engineer/cleric	Split level well appoint G, lush.	English, enjoy lifestyle, public transport, air pollution
5 2 yrs	Warren & Natalie	40 35	Full-time	Teachers six children	Double 2-storey G, fruit, veg, fowls	Enthusiastic for eco village creates Newsletter
6 4 yrs	Sandy	56	Retired	Farmer 'jack of all trades' teenage children	H Trust-share 2 level small house basic G	Values water, science technology, water shortages so despairs vineyards
7 1 yr	Wil & Margaret	69 63	Retired	Motor mechanic/ Hse wife	2-storey well appoint. G, crtyd	European/English value freedom Aus, future oriented
8 2 yrs	Myra	35	Pens'n	Previously paid housekeeper, child	Low income housing tenant, rw not connected. G	Alone NESB Peru, anxious to keep tenancy, boils water or gets ill
9 3 yrs	Belinda	40	Full-time	3 jobs shift hosp lab, child adult	Single storey modest G in back yard	Lone parent, very busy, values security, help from coordinator.
10 2 yrs	Kim	28	Full-time	Driver at car manufacturers	2-storey well appoint. G, large.	Active water sports, observes water pollution
11 5 yrs	Don & Fiona	54 50	Full-time	Owner driver/ Disabilities carer	H Trust 2-stry small house, G	Key Coord had sewage up to elbows, helps tenants
12 3 yrs	Malcolm	68	Semi retired	Instrument engineer, Land-lord, children	Substantial house and G	Annoyed aborted high tech features, outspoken Coordinator
13 5 yrs	Mandy	28	Part-time	Medic secretary, two children	H Trust 2 storey G front, courtyard	Energetic, water sports, observes debris in water
14 3 yrs	Karl & Hilda	77 73	Retired	Compositor/ Tailor	Single well appoint. G crtyrd	European, wary, appreciates support from key coord.
15 5 yrs	Megan Chloe	39 37	Full-time	Cleric/ Horticulture	H Trust 2-storey modest G	Value security, environ. but tech & other problems
16 2 yrs	Lorraine	49	Full-time	Teacher Adult child	2-storey sold G, back lawn	From land, positive/wary environ knowledgeable
17 2 yrs	Ross & Florence	55 52	Retired	Business self fnd retiree/L-lord	2-storey rented out Fruit, herbs.	English, energetic, positive, weigh things up
18 5 yrs	Luke	45	Full-time	Lab technician Adult children	2-storey huge, well appoint, G.	Quiet demeanour, values science & technology
19 1 yr	Candice	50	Full-time	Medical sec. adult child	Single well appointed.	Active in tennis, aware history of region, alert
20 1 yr	Robyn	46	Home:	Foster mother of five	2-storey basic G, back lawn	Proud assoc. with conserv. prefer more environ features

[1] One of three coordinators. [2] Social outlook: upwardly mobile. [3] Recycled water.

APPENDIX 6.1

Mawson Lakes Research Participants

Intvw yr ML	*Names*	*Age*	*Employ. status*	*Occupation Children*	*Housing style garden if signif.*	*Observed outlook*
1 2 yrs	Sam & Evelyn	64 60	Own business	Builder – pergolas	Sgl well appoint. Garden, fountain	Positive for ML, son bought also, founder RA[1] annoyed 3 wanted to be PR person.
2 1 yr	Naomi	35	At home & part time	Cleric Home duties, children	Single. Basic. Still no garden	From land, proud assoc with high tech/environ, u/mobile.[2]
3 2 yrs	Vaughn & Anna	45 45	Full time	Sales rep Home duties	2-storey spacious well appointed	Fair, disappointed block so small, planes overhead, observes 'wanna bes'.
4 1 yr	Leigh & Elaine	50 50	Self employed	Building industry	2-storey+carriage well appointed	Anti Trust housing so like ML, wary, local focus. u/mob
5 6 mth	Ivan & Donnella	64 68	Retired	Previous: oil transport	2-storey spacious well appointed	European, enthusiastic, outward thinking, hard work
6 2 yr	Amanda	41	Own business	Trucking milk mother disbl	Single, spacious, indoor pool.	Assertive, child disabilities, pleased ML, community
7 ¼ yr	Dennis & Kate	47 41	Full time	Tank presses to wineries	2-storey basic	W-class, keen no Trust houses, ML 'up & coming'
8 2 yrs	Robert Deborah	32 31	Full time	Info tech training mgr	2-storey basic but linear park	Astute, articulate, no time TV news with children
9 1 yr	Simon	40	own business	Systems analyst	2-storey well appointed spac's	Mid-east background, quiet wary ML mgmnt of rw[3]
10 1 yr	Hugh & Carla	53 46	pension/ nurse	Advocate in the community	2-storey+carriage well appnt Linr Prk	Both assertive, alert, like idea rw, disappoint. delays
11 1 yr	Eric & Kerry	30 30	Full time	Public servants	Single storey basic just putting in garden	First home, annoyed public gardens not as good in their area, appreciate RA
12 2 yrs	Henry	42	Full time	Airconditioning technician	Single storey basic	Philippines, negative, anti govt., apprec ML security
13 2 yrs	Stephen & Katrina	35 34	Full time	Sales and marketing	Single storey basic well appnt	From Barossa, keen ML success, enjoy lakes
14 1 yr	Tracy	40	Full time shifts	Nurse/ mother	Single storey basic	Twins demanding, no time to make friends, thought rw on
15 2 yrs	Tony & Diana	40 35	Full time	Ex farmer, wkshp supvsr	2-storey basic modest	Wary, area neglected as 11, storm water industrial pol'n.
16 2 yrs	Eric & Nicola	33 29	own business	Computer consultant	2-storey, basic	Husband me oriented, insist being PR in RA, up mobile
17 2 yrs	Brian	55	Full time	Public servant – trainer	2-storey, garden. interviewed in city.	Self opinionated, PR in RA, local focus ML not run properly: environ principles
18 2 yrs	Wayne & Alicia	47 43	Full time	Export sales	2-storey, basic, modest	Fair minded, put up with botched tech and building, well travelled, values water
19 2 yrs	Nick	33	Full time	Manager/ executive	2-storey, spacious huge, Linear Prk	Strong opinions, questions need to conserve water
20 1 yr	Vince & Teresa	30 28	Full time	Orchardist	Single storey, basic	Anti govt, apprec high tech, annoyed delays, no bus

[1] Residents' association. [2] Social outlook: upwardly mobile. [3] Recycled water.

APPENDIX 6.1

Altamonte Springs Research Participants

Invw.	*G*	*Age*	*Employ. status*	*Occupation*	*Children Pets*	*Observed outlook: what water means*
1	M	39	Full-time	A City office manager	Cats	Self confident. Life, green, world, plants, wash car
2	F	47	Full-time	Clerk at City office	Two teenagers, 2 cats	Positive, self confident. Life, survival, everyone needs it
3	F	71	Full-time	Technician at City office	Adult child	Helpful, friendly, cheerful. To live, essential.
4	F	47	Full-time	Planning clerk at City office	Teenager, 2 dogs	Positive, confident. Life, most important resource.
5	F	70	Retired	G-mother; 54 g-children	none	Hispanic, strong views, close family. What you drink, pay for filtering.
6	M	77	Retired	Administratio n 43 yrs for same firm	none	Appreciates rw to water lawn otherwise wouldn't be able to. Life, conscious of clean water in myself.
7	F	50	Full-time	Musician	Dog and cat	English, very confident. Life, a basic necessity but one of the most basic.
8	M	48	Full-time	Consulting engineer	2 adult children, 2 pets	Knowledgeable water reuse. Need to protect drinking water and use less.
9	F	55	Widow	"Widow on own'	none	English. Can't live without it, drink gallons of it, very important.
10	M	55	Full-time	In finance	2 children	Everything stops without water –like the air, everything secondary to it.
11	F	62	Retired	Owned pizza parlour	none	Hispanic. I don't know – liquid. Good for plants.
12	M	23	Full-time	Landscape maintenance	Pets	Tap
13	M	69	Full-time	Aerospace engineer	none	Life. Annoyed restrictions, fines. Enough water. Homeowners' association president.
14	F	62	Full-time	Property manager	Dog	Life. Homeowners' association president.
15	F	45	Full-time	Assistant administrator	Dog	Survival
16	M	60	Full-time	Consulting engineer	none	Life line to successful living.
17	M	18	Full-time	University student	Dog, 3 cats, turtle, fish	Life. Water grass.
18	F	40	Full-time	scientist, nurse	Children	Hispanic. Very important, survival., what fun you have with it!
19	M	52	Semi retired	Golf course consultant	Children 2 dogs	Survival. A basic necessity. Homeowners' association president.
20	M	45	Full-time	Taxi driver	Children	Essential to life. (Interview completed prior to last questions. Called away.)

APPENDIX 6.1

Brevard Research Participants

Invw.	*G*	*Age*	*Employ. status*	*Occupation*	*Children/pets*	*Observed outlook: what water means*
1	F	65	Retired	Not volunteered	2 dogs	Liquid to drink. Homeowners' association president.
2	M	62	Retired	Not volunteered	none	Needed to survive. Homeowners' association president.
3	F	54	Home	Keep house	Cat	It is a necessity; wash clothes. It is essential. Homeowners' association president.
4	M	70	Retired	Restaurant owner	2 dogs	Can't live without water.
5	F	36	Home	Housewife	Dog	Keeps you healthy.
6	F	36	Home formerly in PR	Stay at home mum. Masters Public Cmn'cn	Children Dog Fish	Daily use, drinking. Keeps us alive.
7	M	58	Retired	Manager, Telephone Co.	none	You need water to live, wash, drinking.
8	F	50	Full-time	Accountant	2 adult children, 2 pets	Have a lake out the back, so aesthetics, water we reuse & inside. Homeowners' association president.
9	F	33	Full time	Self employed	none	Personal, valuable thing.
10	M	21	Full-time	Computer technician	Dog	Life.
11	M	50	Retired	Engraver	Two teenagers	I'm pretty good at chemistry, so water is 1 atom of hydrogen and 2 of oxygen. We need 8-10 glasses of water a day to keep rehydrated and cold water creates negative calories!
12	F	60	Retired	Government employee	none	It is life. How much of our body is water? Sustenance. I try to be what I consider a concerned consumer.
13	F	40	Home	Home maker Previously teacher	Children, Pets	I think of something, nice, clear, refreshing, healthy. Hispanic.
14	F	80	Retired	Home maker	none	Hard to do without it. (Frail, interview completed prior to last questions.)
15	F	68	Retired	Own motel & restaurant	Dog	Necessity. Need it. (Lived at a place where no tap water provided.)
16	F	35	Full-time	Teacher	Children Pets	Nourishment, hydrates, quenches thirst for people, animals.
17	M	41	Full-time	Treatment plant operator	2 cats	No life without it – we would be dead.
18	F	32	Full-time 60 hrs.	Home maker Shift worker	Children, 1 pet	Means everything.
19	F	70	Retired	Not volunteered	none	Life to me. I love water. Fresh, cool, nice.
20	F	50	Full-time	Self management	Two children	Health.

APPENDIX 8.1

Factors associated with agreement to potable reuse at drink level

Independent variable	New Haven		Mawson Lakes		Alt. Springs		Brevard	
	9 Agree	45%	6 Agree	32%	9 Agree	47%	15 Agree	79%
Salience of water issue	3/5	60	5/12	42	5/6	83	6/6	100
- not salient	6/15	40	1/7	14	4/13	31	9/13	69
Drink tap water	7/15	47	3/8	38	4/7	57	5/5	100
- filter water	0/3	0	3/10	30	4/10	40	9/13	69
- btl water	2/2	100	0/1	0	1/2	50	1/1	100
Handle recycled water	5/9	56	4/12	33	6/11	55	6/7	86
- do not handle	4/11	36	2/7	29	3/8	38	9/12	75
Price sanctions unfair	3/7	43	1/7	14	3/8	38	3/4	75
- not cited	6/13	46	5/12	42	6/11	55	12/15	80
Male gender	7/13	54	4/16	[25]	8/9	89	6/6	100
- female gender	2/7	29	2/3	[67]	1/10	10	9/13	69
Restrict water for business	8/16	50	5/11	45	5/12	[42]	12/14	86
- don't know/disagree	1/4	25	1/8	13	4/7	[57]	3/5	60
Trust CSIRO/ independ.science 6+	6/13	46	6/17	35	4/8	[50]	10/11	91
- trust <6	1/3	33	0/0	0	3/6	[50]	2/4	50
Trust Health Dept 6+	6/8	75	3/6	50	7/14	[50]	10/13	77
- trust <6	3/8	38	3/11	27	1/1	[100]	3/4	75
Trust Water & Swrg Authority 6+	4/8	50	4/10	40	7/16	[44]	10/13	[77]
- trust <6	4/9	44	2/9	22	2/2	[100]	4/5	[80]
Trust United Water 6+	4/7	57	4/10	40				
- trust <6	2/6	33	2/8	25				
Trust Local Council 6+	7/12	58	4/13	31				
- trust <6	2/6	33	2/7	29				
Age 18-34	0/2	0	1/5	20	2/2	100	3/3	100
Age 50-64	3/4	75	1/5	20	4/7	57	7/7	100
Children at home	2/5	40	5/9	[56]	1/3	33	5/6	[83]
- no children	7/15	47	1/10	[10]	8/16	50	10/13	[77]
Risk concerns: children	2/5	40	1/4	25	1/2	[50]	5/7	71
- not concerned	7/15	47	5/15	33	8/17	[47]	10/12	83
Professionals	1/4	25	1/3	33	6/7	86	3/4	75
Self employed	3/3	100	2/5	40	1/2	50	4/4	100
White collar	3/8	38	3/6	50	1/7	14	3/3	100
Blue collar	1/3	33	0/4	0	mis		3/3	100
Other (eg retired)	1/2	50	0/1	0	1/3	33	2/5	40
Trust EPA 6+	5/9	56	3/11	27	8/14	57	10/12	83
- trust <6	4/7	57	3/7	43	1/4	25	3/4	75
Cite d-water qual for water concern					2/6	33	6/8	75
- cite other					7/13	54	9/11	82
Longer residency	4/7	57	5/11	45				
- shorter	5/13	38	1/8	13				
Water saving appliances	2/3	67	4/10	40				
- none	7/17	41	2/9	22				
SA agricultural reuse	4/7	57	3/9	33				
- agree	5/12	42	2/8	25				
Privatisation	3/11	27	3/13	23				
- not an issue	6/9	67	3/6	50				
System concerns	2/8	25						
- less of an issue	7/12	58						

Note: Missing responses not included and missing & don't know responses not included in Trust results.

Factors associated with agreement to potable reuse for showering and drink levels
Mawson Lakes and Altamonte Springs

Independent variable	Mawson Lakes *n=19*				Altamonte Springs *n=19*			
	Laund. Shwr		Cook drink		Laund. Shwr		Cook drink	
	11 Agree	58%	6 Agree	32%	15 Agree	79%	9 Agree	47%
Salience of water issue	8/12	67	5/12	42	6/6	100	5/6	83
- not salient	3/7	43	1/7	14	9/13	69	4/13	31
Drink tap water	5/8	63	3/8	38	4/7	[57]	4/7	57
- filter water	5/10	50	3/10	30	9/10	[90]	4/10	40
- btl water	1/1	[100]	0/1	0	2/2	[100]	1/2	50
Handle recycled water	8/12	67	4/12	33	11/11	100	6/11	55
- do not handle	3/7	43	2/7	29	4/8	50	3/8	38
Price sanctions unfair	3/7	43	1/7	14	6/8	[75]	3/8	38
- not cited	8/12	67	5/12	42	9/11	[82]	6/11	55
Male gender	8/16	[50]	4/16	[25]	8/9	89	8/9	89
- female gender	3/3	[100]	2/3	[67]	7/10	70	1/10	10
Restrict water for business	8/11	73	5/11	45	10/12	83	5/12	[42]
- don't know/disagree	3/8	38	1/8	13	5/7	71	4/7	[57]
Trust CSIRO/ independ. science 6+	9/17	53	6/17	35	6/8	[75]	4/8	[50]
- trust <6	0/0	0	0/0	0	5/6	[83]	3/6	[50]
Trust Health Dept 6+	5/6	83	3/6	50	11/14	[79]	7/14	[50]
- trust <6	5/11	45	3/11	27	1/1	[100]	1/1	[100]
Trust Water & Swrg Authority 6+	6/10	60	4/10	40	13/16	[81]	7/16	[44]
- trust <6	5/9	56	2/9	22	2/2	[100]	2/2	[100]
Trust United Water 6+	6/10	[60]	4/10	40				
- trust <6	5/8	[63]	2/8	25				
Trust Local Council 6+	7/12	[58]	4/12	33				
- trust <6	4/7	[57]	2/7	29				
Age 18-34	2/5	40	1/5	20	1/2	50.00	2/2	100
Age 50-64	2/5	40	1/5	20	7/7	100	4/7	57
Children at home	7/9	[78]	5/9	[56]	3/3	[100]	1/3	33
- no children	4/10	[40]	1/10	[10]	12/16	[75]	8/16	50
Risk concerns: children	2/4	50	1/4	25	2/2	[100]	1/2	[50]
- not concerned	9/15	60	5/15	33	13/17	[76]	8/17	[47]
Professionals	3/3	100	1/3	[33]	7/7	100	6/7	86
Self employed	2/5	40	2/5	40	2/2	100	1/2	50
White collar	5/6	83	3/6	50	5/7	71	1/7	14
Blue collar	1/4	25	0/4	0	mis		mis	
Other (eg retired)	0/1	0	0/1	0	1/3	33	1/3	33
Trust EPA 6+	6/11	[55]	3/11	[27]	11/14	[79]	8/14	57
- trust <6	4/7	[57]	3/7	[43]	4/4	[100]	1/4	25
Cite d-water qual for water concern					6/6	[100]	2/6	33
- cite other					9/13	[69]	7/13	54
Longer residency	7/11	64	5/11	45				
- shorter	4/8	50	1/8	13				
Water saving appliances	7/10	70	4/10	40				
- none	4/9	44	2/9	22				
SA agricultural reuse	3/9	[33]	3/9	33				
- agree	6/8	[75]	2/8	25				
Privatisation	7/13	54	3/13	23				
- not an issue	4/6	67	3/6	50				

Note: Missing responses not included, and missing & don't know not included in all Trust results.

New Haven discussion: Investing in technologies for laundry & shower

Invw	*Response/ Properties* *1 Technology, 2 source, 3 cost, 4 conserves, 5 trust, 6 environment, 7 supply , 8 alternatives*	*Category* SA, A	D, SD
1	341 Strongly agree [Concerned with shortage of supply due to pollution.]	SA 7	
2	198 C: I wouldn't be that keen on that one. 200 NC: No. 201 J: Disagree.? 202 NC: Strongly disagree		SD 2
3	380 D: Not for recycled water. 381 J: So you don't think its possible for them to get that water to the state where you could use it in the shower? 382 D: Personally, I think they'd be better off to go for desalinity of seawater.		D 2; 8
4	463 B: No I think you've got to have pure water for showering and washing clothes. 464 K: I think the water needs to be improved more for that, don't you. [Bernard and Karen first thought I was talking about tap water.] 468 Karen: I agree 473 Bernard: If it was at an acceptable standard. But I think a lot more has got to be done in general to reclaiming waste water like flood water, storm water. It all goes to waste - a large percentage of it goes to waste, doesn't it.	A -1, 8	
5	352 W: Yes! 353 N Yes! [enthusiastic]	SA 1, 4	
6	Sandy: Strongly agree. [Farmer with drought experience.]	SA 7	
7	386 W: Yes, that would be even better. I would sit under the shower - no problem. 387 M: As long as there is no smell. I don't want a smell thank you. 388 W: If they go and put it through a filter then there would be no smell. I agree with that. All you need water for is for cooking.	A 1 M: -1,2	
8	303 M: No, no, no! [Currently boils water because of chlorine and reaction.]		SD -1
9	100 Belinda: I'd hate to think anyone would drink it. I don't know what would happen. S&L: Don't know		DK 2
10	64 Kim: Disagree. Disagree. Unless they can guarantee the water is 100% OK – and they can't base that on the history here.		D –1, -5
11	D: Well it would be a big saving on water if they could 414 F: I agree if they got it to a standard that I was happy with. 416 F: If it was to such a good standard, yes. [In a round about way – Don A.]	A -1	
12	Malcolm: Disagree [Livid about mismanagement of features of NH.]		D -5
13	158 M: Recycling water for a shower? 160: No. …No, I wouldn't like that.		D 2
14	277 K: I'm not sure about that. 278 H: I used to save the bath water for the garden, but … [grimace]. 279 KH: Disagree		D 2
15	699 C: I think they need to focus first on the other side and improving it with odour and all those type of things.700: J: So you disagree? 701CM: Yes.		D -1
16	271 Oh, I don't know about that. What does it go across to? 273 I don't know about that one. I don't know if they could get the quality to be safe. 275 Don't Know		DK-1
17	337 R Yes I'd agree with that. I have a provider - are we allowed to put a proviso in that? It's got to be quality. If you're looking at washing clothes and washing yourself, its got to be good quality. 342 F I don't think that you'll get people to agree with that. I don't think they'd like it. 343 R: It would be a difficult one you see because when it comes to sort of personal hygiene but what is the difference between them taking the water out of the Murray and putting it through their processors, collecting the rain water which can be acid rain and all the impurities and they purify it and put it through your main. So that's the process that it has to go through. Now that water gets used and recycled - now if that process is done all over again, wouldn't that water that's coming out - couldn't it be as clean as the original. If it could, then shower and wash your clothes in it. Well, it would have to be proved to me that they could actually do it.	A -1, F: [D] 2	
18	186 Luke: Well yes, if it was a viable proposition, sure.	A -3	
19	Karen 220: Strongly agree	SA 1	
20	294 Yes, Strongly agree [Reflects conservation values and behaviour.]	SA 4	

Mawson Lakes discussion: Investing in technologies for laundry & shower

	Response/ Properties *1 Technology, 2 source, 3 cost, 4 conserves, 5 trust, 6 environment, 7 supply , 8 alternatives*	*Category* *SA, A*	*D,SD*
1	288 S If you can get it to a decent standard. 289 E The standard - I wouldn't mind washing my clothes in it. 289 S You can recycle water to be able to drink the b…. stuff, so it's all there. [Agree]	A –1 (E: -1, 2 shower)	
2	124 N Well if we are going to use it for cooking, we can use it for showering, yes, I agree. (Transposed)	A 1	
3	177 B: Agree 179 A: Yes. [Concern for supply.]	A 7	
4	159 L Providing it was treated [to the standard]. Can't be any worse than the Murray River can it. That's the unknown thing, I mean. Not sure about that. If we had one month of the water when it comes on line we would then know: yes, fine - or no, it needs a bit more, or it pongs.		DK -1
5	344 I: I don't think so. [Facial expression]		D 2
6	A: 180 If they can do that, why not. Yes, I agree.	A –1	
7	289 D Strongly agree with that. Go for it because that's where all the water goes – in the shower.	SA 4	
8	219 R Yes, I strongly agree with that.	SA 1	
9	[Did not answer showering/laundry/cooking/drinking; uncertain recycled water planning.]		Miss.
10	172 H: I'd have reservations about showering and I'd have reservations about washing good clothes [laughs]. That's my opinion. K: I don't think you'd need to look into recycled water because to me that has to be germ-free and has to be as clean as it is now. H I'd have to be boiling it to make sure. I wouldn't like that.		D 2, - 5
11	K: Oh, if its researched and it can be done, then fantastic as long as its not going to impact on our health. I agree. N: I'd want to know all the facts. If they get all the evidence and they prove its OK. K: What about our ancestors. N: Our great, great grandfathers were dying at 40 years old. K: That wasn't purely because of water. N Nothing to say that it was not, either.	A –1, 2	
12	164 H Disagree. [strongly anti government]		D -5
13	190 K: Strongly agree. S: I'd agree with that, probably not 100% sure, but yes I'd agree with that.	A -1 (K: SA)	
14	112 T So its using this grey and black water to have a shower. I don't know about that. The question again? T: I agree. (agree 'to invest')	A 2,-1	
15	192 T: Probably not. Going on the history of SA Water, I doubt whether there would be quality control.		D -5
16	214 N: Showering. I don't like the idea of recycled water for showering. E: I was going to say its almost reinventing the wheel if you like. You've got mains water coming through which is drinking water quality. Then you've got to recycle that to make it drinking water quality again. Now how much money is that going to take to do that? Is it worth spending the money? N: No. Don't know. E: Probably Don't Know - its very hard to tell.		DK –3 (N: 2)
17	140 I agree	A 1	
18	W: Strongly agree A: Agree	SA 1 (A: A)	
19	S&L (Nick) If you are talking about showering, you are basically talking drinking - so you are saying recycled water back into drinking water quality. Ah - some people would say that's not going to be real hard to achieve when you look at the quality of drinking water we have regardless, so - again, its one of those ones where I really don't know. I don't know whether we should because its one of those things that its hard to know how bad a problem this is. I mean, every time it rains, essentially there is fresh water coming down. … I mean its important that the water that goes out can't be causing another problem somewhere else. Whether its going down into the aquifer field or whether its going out to sea		DK –7
20	334 V: No, I don't think we have to go that far. We've got a fair bit of water for the population in this country. We don't need to go that far. We are not in space or something.		D 2, -7

New Haven discussion: Investing in technologies for cooking & drinking

Invw	*Response/ Properties* *1 Technology, 2 source, 3 cost, 4 conserves, 5 trust, 6 environment, 7 supply , 8 alternatives*	*Category* *SA, A*	*D, SD*
1	343: Cooking and drinking. Well. providing the water was suitable for cooking and drinking, yes. Well, yes. Technology - yeh, OK. I'll agree. 345 SA	SA -1	
2	203 Money should be spent. We wouldn't want to now, but in 30 years time.	A 1	
3	386 David No. Desalinity of salt water for me. 387 R No. [tone of voice] D - SD 388 J Why are you saying desalinity of salt rather than purifying sewerage. 389 D Well you take the salt out of sea water and you've got H_20. You take recycled water, you've still got nutrients and things left in it. Although it's recycled, its gone through a sewerage process, its still got nutrients and things in it and its still got other chemicals in it. Where to me you take the salt out of seawater you've got good clean water.		SD 2; 8
4	B: Oh, they could try. [Then reflected.] It would have to be 100% guarantee that they were doing the right thing. But the biggest problem here is that you are relying too much on the human element doing the right thing. B: It's like in my engineering field. In the advent of computer controlled machines. That machine will only produce as good as the programmers will let it produce and then you've got the human error factor coming in. K: There always is. B: There always is the human factor.		DK -1
5	355 Recycling water for cooking and drinking. You mean, like when you finish using the water to cook your vegetables, do you know you can use it in this. Is that the sort of thing. 356 N No, having recycled water brought to you in the first place, not the other way around. 358 W Like an evaporation system … 360 N I don't know about that. 362 N I don't strongly agree with that. I think it's a good idea. 363 W Well, lets face it, that's what nature does, doesn't it. But, people's taboos.	A -2	
6	S: Definitely strongly agree 182 Sandy explained they ran out of rainwater on the station, and extracted mains water out of sheep troughs to use in the house. "It soon teaches you not to waste water."	SA 7	
7	390 M Oh no. Or… 391 W: Yeh it would be good - if you could do it. 394 W: I would go with it - I would spend the money to do that. Anything to save our resources.	A –1 M:SD 2	
8	305 M No (sighed; has to boil the water due to chlorine, chemicals.)		SD-1
9	Don't know		DK
10	K Strongly disagree [Discussed trust in recycled water quality previously.]		SD –1,5
11	437 D Well, Why Not. 438 F Yes	A 1	
12	Strongly disagree. [Bad experience of authorities and managers of NH.]		SD 5
13	164 M: No - definitely strongly disagree. [Washes children re non pot. now.]		SD 2
14	281 KH: Strongly disagree. 282 H It's too risky.		SD 2,-1
15	703 CM No!		SD 2
16	Don't know.		DK
17	348 F But what if they had break downs and things like that. You've got to think about. 349 R What do you mean break down. 350 F Well, in their cleaning process - we know that these things happen. 375 R We'd have to be really sold on that one. It would have to be controlled so strictly and people would be very sceptical of it. … The thing that would worry would be would they cut corners for profits to do it because it would be expensive to do it - there's no doubt about it. 376 F They out source these things as well because you couldn't really trust the companies that they use.		DK -1; 2,-5
18	188 L Yes [laughs] it's a daunting thought but I'm sure if they can desalinate water I assume it would be possible to recycle or refine water to a degree where you can drink it.	A 1	
19	Yes, strongly agree.	SA 1	
20	296 Yes. Strongly agree 298 if it was pure enough, yes.	SA -1	

Mawson Lakes discussion: Investing in technologies for cooking & drinking

Invw	*Response/ Properties* *1 Technology, 2 source, 3 cost, 4 conserves, 5 trust, 6 environment, 7 supply , 8 alternatives*	*Category* *SA, A*	*D, SD*
1	S Yes, agree.	A 1	
2	N 122 Agree	A 1	
3	181 B (Laughs) Don't know. A Don't know.		DK 2
4	161 L: Now you are talking about big dollars. I guess that ultimately that's what we might have to do but that's got to be the most expensive option. E: Why do you think that. L: Well, the Murray River is facing death basically. Whatever they can do to minimise the amount of water that is coming out of there. Whatever they can do here, they could transfer that technology to other states. They are taking sea water and turning it into drinking water and they are doing it using a system that doesn't use fuels etc. L I think desalination is closer than the recycled option. They've done a lot of work on that and it makes more sense because they're already doing it now - the water is drinkable.		D –3, 8
5	346 ID: No. Ivan went on to say desalination would be better. Donnella agreed. Aware that sewage is disposed upstream, from Albury to the shacks.		D 2,8
6	182 A [laughs] Will we ever get to that? There will always be a stigma I think. It's probably not worth pursuing. But then if we have to drink that stuff when its mucky anyway. Yeh, we'd have to do it.	A 2, 7	
7	291 DK Oh. D: Don't like recycling for drinking as such. Disagree K: I think for human consumption**,** we don't know. It would have to be really spot on – do lots and lots of research into it.		D 2 D:DK -1
8	R Strongly agree	SA 1	
9	Did not answer [Raises drinking water quality deterioration experienced now.]		Miss
10	176 H: No, I don't know how you'd go - I suppose they'd have to make sure it was dam clean! K: I mean I think they need to continue to make sure that the mains water that we're getting now is as safe as it possibly can be. H: But they're talking about recycled water. H: No, I wouldn't like that. SD. K: No, I think they could look at that. Because we're such a dry country.		SD 2 K:A 7
11	239 N If you start playing with chemicals and that - you're talking about chemicals aren't you. If there are so many chemicals in drinking that then it would be the same as the mobile phone I would think -in time. Shower - I think you could probably get away without drinking it, just wash all over. K: And if you do, it's a small quantity.		D -1
12	166 H I don't know. I've lost the plot H No. [Authorities.]		D - 5
13	193 S Well, why not. Yes, I'd agree with that. K: Yes.	A 1	
14	116 T I don't know if I'd like the idea of toilet water producing drinking water, even though its clean. J So it's the idea of it. T: Yeh - there would be a lot of people that wouldn't like that, I think. Disagree		D 2
15	194 D I don't think I'd like to drink it. T Storm water, yes. J Storm water but not grey and black water. T: No. Not with household waste in it.		D 2, 8
16	222 N I don't know whether people would want to drink it even though knowing that we've got filtered water. E: I suppose the concept is the one thing that worries me and that is cost. Cost of investment and also cost to the consumer in the end. N: But would you sip on a glass of water that you had known had come from the toilet. E: If it was guaranteed that it's the same as mains. N: I still think No, not that. E If you give somebody a glass of water without telling them, I'd guarantee they'd say: This is fantastic. If you tell the person: That was effluent water. They're going to cringe. N Exactly - people won't drink it.		D 2, -3
17	What's the next one down from agree. Don't know.		DK
18	249 W: Yes, I'd strongly agree about that too. I see how precious water is to people in the Middle East and how money and technology goes into recycling of water there - or desalination. They do it well.	SA 1 (A: A)	
19	Is it just to keep them in a job that they're interested in or because there's a genuine need for it?		DK -7, -5
20	336 T No. V: The cost involved completely outweighs any benefits. We have got more than enough good quality drinking water, we don't have to do that.		SD –3, -7

Altamonte Springs responses to investing in technologies for laundry & shower

	Response/ Properties	*1 Technology, 2 source, 3 cost, 4 conserves, 5 trust, 6 environment, 7 supply , 8 alternatives*	*Category* SA, A	D,SD
3	A little but not all the way.		A 2	
4	The thought!			DK 2
6	Would be useful. [Note earlier concerns about clean water in myself.]		A 1	
9	If they could do it. Feels like its not clean. If they can make it clean.		A -1, 2	
13	Probably drinkable.		A 1	

Brevard County responses to investing in technologies for laundry & shower

	Response/ Properties	*1 Technology, 2 source, 3 cost, 4 conserves, 5 trust, 6 environment, 7 supply , 8 alternatives*	*Category* SA, A	D,SD
3	I don't have the scientific knowledge.			DK
17	To a point.		A 2	

Altamonte Springs responses to investing in technologies for cooking & drinking

	Response/ Properties	*1 Technology, 2 source, 3 cost, 4 conserves, 5 trust, 6 environment, 7 supply , 8 alternatives*	*Category* SA, A	D,SD
4	A good idea, but!			DK 2
5	No! Bad! You cannot drink this water! [Researcher emphasised investing in technologies to make the water cleaner for drinking but still disagrees.]			SD 2
6	Probably good idea but would be reactive.			D 2
8	Closed loop system - the Keys. Treated effluent directly into pipe. Keys, Largo. Effluent WTP/RO/water system - potable reuse. 24,000 population. Normally 3 log reduction. Septic tank. 7 log reduction. Fire protection, showers, clothes washing.		SA 1	
9	I don't trust them enough for that. [Rated City 6, 3rd lowest rating.]			D 2 -5
11	The thought of it.			D 2
18	If in extreme necessity its going to happen but I wont like to drink it. Dilution of water is much higher (effluent is diluted in rivers/rain; considers direct potable).			D 2 -1
19	If they can.		A -1	

Brevard County responses to investing in technologies for cooking & drinking

	Response/ Properties	*1 Technology, 2 source, 3 cost, 4 conserves, 5 trust, 6 environment, 7 supply , 8 alternatives*	*Category* SA, A	D,SD
3	They can do the best they can and then I would have to be convinced.		A -1, 2	
4	Exciting technical possibility.		A 1	
6	It is going to be a hard sell. The immediate image that comes to mind. People know they have a choice and they won't choose that. They would have to have no other choice to accept it.		A 2, 8	
8	They could work on it.		A 1, 2	
11	May be		A 2	
13	If all water [for drinking] from market, and not from tap water, then it would be cheaper. [$1 for bottled water at the market. Saying the recycled water would be cheaper (like non potable water) than drinking quality standard used for all uses.]		A 1	
15	I guess so.		A 2	

Summary of reasons given: showering and laundry

Category	NH		ML		Alt Spr		Brevard	
	f	%	*f*	%	*f*	%	*f*	%
Reasons favour								
Technology	3	25	4	31	2			
- Conditional “if it works”	3	25	5	38	1			
- Conditional: concerned about the source			3	23	2		1	
Cost efficient								
- if viable	1	8						
Conservation value	2	17	1	8				
Supply: needed to supplement	2	17						
- Conditional: “if its needed”								
Alternatives	1	8						
Total:	12	100	13	100	5		1	
Reasons oppose/don't know								
Technology	4	33	1	10				
Source	5	42	3	30	1			
Cost: will not be viable		0	1	10				
Trust: don’t trust ongoing operations	2	17	3	30				
Supply: not needed		0	2	20				
Alternatives	1	8.3						
Total:	12	100	10	100	1	0	0	

Summary of reasons given: cooking and drinking

Category	NH		ML		Alt Spr		Brevard	
	f	%	*f*	%	*f*	%	*f*	%
Reasons favour								
Technology	4	44	5	71	1		3	30
- Conditional “if it works”	3	33			1		1	10
- Conditional: concerned about the source	1	11	1	14			5	50
Cost efficient								
- if viable								
Conservation value								
Supply: needed to supplement	1	11	1	14	2			
- Conditional: “if its needed”								
Alternatives							1	10
Total:	9	100	7	100	4	0	10	100
Reasons oppose/don't know								
Technology	5	36	1	5.6	1	14		
Source	5	36	7	39	5	71		
Cost: will not be viable			3	17		0		
Trust: don’t trust ongoing operations	3	21	2	11	1	14		
Supply: not needed			2	11		0		
Alternatives	1	7	3	17		0		
Total:	14	100	18	100	7	100	0	