SOCIAL IMPACT ASSESSMENT REPORT

FOR THE

WATER CORPORATION PROPOSAL

TO SOURCE WATER FROM

THE SOUTH WEST YARRAGADEE AQUIFER

As part of the Sustainability Evaluation for the proposal

Synnott Mulholland Management Services Pty Ltd
September 29, 2005
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EXECUTIVE SUMMARY

This social impact assessment has been undertaken as part of the sustainability evaluation for the proposal to extract water from the South West Yarragadee Aquifer to supply the Integrated Water Supply Scheme (IWSS).

The social impact assessment has progressed in close alignment with the environmental and economic analyses to provide balanced and accurate information for the sustainability evaluation. The contribution of this study is to examine the way in which the proposed Yarragadee abstraction will affect people in the south west and in Perth.

Factors identified in the Scoping Report and addressed by this study include:
- Lifestyle, amenity and recreational use and access
- Sense of place
- Indigenous communities
- Existing and future needs
- Equitable access to water
- Development footprint

Undertaken in three phases, the study commenced with secondary data collection and extensive grassroots community research to understand community concerns and identify the social variables of interest:
1. Sense of place and social values
2. Futures foregone
3. Benefit and equity in terms of accessing water

In the second phase, the social impacts of the proposal were assessed. The social impacts are both positive and negative. The positive impacts relate to the increased access to water in the south west afforded by an extended IWSS (eg., the Kemerton Industrial Estate in the short term, and the Busselton and Margaret River communities in the medium to longer term), the protection to local south west use afforded by the principles of Reasonable Regional Need, and the ability to maintain current water restrictions for IWSS users in the face of potentially more severe restrictions.

Communities such as Augusta are unlikely to be affected by this proposal. Environmental and ecological impacts on the Blackwood, and in other specific locations, are envisaged to be minor and manageable and are not expected to change sense of place, or impact on social values, enjoyment or amenity of the River.

Negative social impacts may occur for Scott Coastal Plain farmers where the incremental constraint on water use presented by this proposal may have an impact on future development capability for their business. If this was to happen, there may be a small economic flow-on affect to the Shire of Nannup. However, given the shire’s track record in weathering the much larger implications of the fall-out of the Regional Forest Agreement, the scale of potential impact as a result of changing land use on the Scott Coastal Plain is expected to be small.
The implications for cultural water values are being explored with the Indigenous community and will be reported separately.

Social impacts during construction and operation were identified. Operationally there will be minimal social impacts and these can be addressed through good management practice and good local communication by the Water Corporation. The construction phase would last for 18 months and significant impacts are likely to be experienced during this period. Impacts include:

- Impacts on individual landholders whose land is on the pipeline route. Impacts include disturbance to summer cropping, access issues, dust, noise, increased traffic on site, and the effects of a workforce of up to 20 people on site.
- Impacts – potentially both positive and negative -- on local communities due to the high influx of construction workers for extended periods of time.
- Positive impacts on local communities through the employment opportunities available to tradesmen and suppliers of relevant services.

The third phase of the study identified four monitoring and mitigation options:

1. Establishment of a mechanism for local monitoring. Community members have identified a number of aspects and areas that they believe need to be monitored. This could involve one overall group to work jointly with the Water Corporation in the collection, analysis and dissemination of data, or a series of groups with responsibility for monitoring of a particular location. Monitoring would include performance on social indicators in addition to environmental and ecological monitoring.

2. Program of direct dialogue with those impacted by the proposal including landholders on the proposed pipeline route and the Scott Coastal Plain. For example, construction impacts can be largely minimised through Water Corporation’s standard procedures which include discussion with landholders to plan construction activities to minimise disruption. The Scott Coastal Plain farmers who have been contacted during the sustainability evaluation process are not in favour of this proposal proceeding. The question though is whether there is a way of developing the proposal to achieve the envisaged benefits of water availability for the broader State-wide community while also achieving the goals of the Scott Coastal Plain farmers. This is worth exploring.

3. Commitment to support sustainability initiatives in the south west, to be administered by a Sustainability Board – a locally based group -- for the benefit of the south west community broadly. Criteria for support of initiatives would be developed jointly between the Water Corporation and members of the Sustainability Board, and may consider applications for projects that can demonstrate a sustainability rationale and would achieve benefits in environmental, economic and social terms.

4. Facilitation of a community South West Water Futures Planning Study to develop the plan for future water needs in the south west and how they will be delivered. This is envisaged as a joint planning exercise to achieve the desired outcomes of clear
expectations for water supply, assessment of alternative options, costing and feasibility, and timeframe. While it would take some time to achieve the outcomes, it would provide certainty to the South West, and would help to resolve the concerns of futures foregone, benefit and equity, and accommodating reasonable regional needs.

The Yarragadee must satisfy community expectations in terms of sustainability and minimal environmental impact for it to be accepted. The science is critical to this, and the results from the scientific studies have been used in determining level and extent of social impact. If the proposal proceeds, its implementation will be subject to ongoing scrutiny from the community, and will need to progress in close alignment with the community.

Recommended commitments to be made by the Water Corporation to assist in the management of social impacts, and to ameliorate negative, and enhance positive, social changes resulting from the proposal are:

1. Commitment to engage in extensive consultation with landowners along the potential pipeline corridor prior to finalising the route.
2. Commitment to work jointly with small communities to manage the potential impacts of influx of construction workers during the construction phase.
3. Commitment to monitoring and transparent reporting of monitoring results. Includes commitment to monitor social commitments.
4. Commitment to open dialogue with the Scott Coastal Plain farmers and to offer to work jointly on agreed priority projects of benefit to both.
5. Commitment to develop a sustainability initiative.
6. Commitment to facilitate and drive a SW Water Futures Planning Study.
1. INTRODUCTION

1.1 Background

This social impact assessment has been undertaken as part of the sustainability evaluation for the proposal to extract water from the South West Yarragadee Aquifer to supply the Integrated Water Supply Scheme (IWSS).

The Water Corporation’s approach to developing a sustainable and secure water supply system to meet growing water demand is to ensure security through diversity. This means looking at a range of options for supply and demand management, including the Yarragadee, and determining the feasibility of each option and its potential contribution to water supply security. If the South West Yarragadee proves to be a sustainable water supply source, it would be used for the IWSS and individual South West Region water supply schemes (south of Harvey).

The Water Corporation is actively pursuing the following new sources of supply to maintain a balance of supply and demand until 2017/18 (Water Corporation, 2005a):
1. Desalination plant no. 1 (45 GL p.a., approved in July 2004, complete October 2006)
2. A water trade with Harvey Water (17 GL p.a., complete October 2007)
3. South West Yarragadee groundwater (45 GL p.a., complete December 2009 if it proceeds)

The Yarragadee proposal is therefore strategically important to the Water Corporation.

Social impacts of the proposal are not assessed under any legislative frameworks. The State Government, through its Sustainability Unit has categorised sustainability as: “meeting the needs of current and future generations through an integration of environmental protection, social advancement, and economic prosperity” (WA Government, 2005) and considers social impacts to be important for consideration alongside environmental and economic impacts.

1.1.1 Objectives of the Sustainability Evaluation

The primary objectives of the Sustainability Evaluation are to:
1. Evaluate the economic, social and environmental impacts of the Water Corporation’s proposition to abstract 45 GL/yr groundwater from the South West Yarragadee for public water supply
2. Determine the most sustainable way of developing the South West Yarragadee Aquifer as a public water supply source in consultation with the community, regulators, stakeholders and the Water Corporation. The proposal will be developed depending on the potential impacts identified and the values, concerns and ideas of the community and stakeholders.
3. Provide information for government and the Water Corporation to decide whether the source can continue to be included in Water Corporation supply planning for the IWSS and the south west region.
Water Corporation seeks to answer the question in three stages:
1. What economic, social and environmental costs and benefits will, or are likely to, occur as a result of this development?
2. Knowing this, what options do we have for developing and/or managing the resource that will minimise the costs and maximise the benefits?
3. What is the most sustainable way of developing the resource?

Social impact component seeks to understand the community as it is now and from that baseline, it seeks to determine:
• What will change as a result of this project?
• What social impacts will occur as a result of these changes?
• How can those social impacts be assessed?
• What can be done to reduce the impacts of this project?
• What can be done to maximise the benefits of this project?

The social impact assessment has progressed in close alignment with the environmental and economic analyses to provide balanced and accurate information for the sustainability evaluation. A number of the social issues raised have been able to answered and resolved through the information gained in the environmental and economic studies. The information from all three studies has led to a modified and more equitable proposal which addresses a number of the community concerns raised during the study.

The process of evaluation where the three areas come together and are tested for acceptability against the project objectives will be documented in the Sustainability Evaluation report. This report, which outlines the Social Impacts Assessment, is an input to the Sustainability Evaluation report and all findings from this study move forward into the evaluation process. This report is written as a stand-alone document.

1.1.2 The social factors to be studied

Sustainability objectives for each relevant social factor have been defined in the Scoping Report (Strategen, 2005a). These objectives are the criteria or desirable outcomes for each social factor, to be achieved if the proposal is to be considered sustainable.

<table>
<thead>
<tr>
<th>Social factors</th>
<th>Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lifestyle, amenity and recreational use and access</td>
<td>Water Corporation will determine, through community consultation, whether community members anticipate changes to lifestyle, amenity, or recreational use or access as a result of the proposal, to ensure that negative impacts do not occur from this project and to explore potential positive outcomes.</td>
</tr>
<tr>
<td>Sense of place</td>
<td>Water Corporation will determine, through community consultation, whether community members with strong attachments to places and heritage values anticipate changes to those places and values as a result of the proposal, to ensure that negative impacts do not occur</td>
</tr>
</tbody>
</table>
from this project and to explore potential positive outcomes.

<table>
<thead>
<tr>
<th>Indigenous communities</th>
<th>Water Corporation will undertake to protect and avoid disturbance of Aboriginal heritage sites. The Corporation will explore potential positive outcomes for and with the indigenous communities.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existing and future needs</td>
<td>The proposal will contribute to meeting the existing and forecasted demand for public water supply in the IWSS and the south west under a range of possible future climate scenarios</td>
</tr>
<tr>
<td>Equitable access to water</td>
<td>Water Corporation will ensure that the water from the proposal is shared and available to the south west and IWSS regions.</td>
</tr>
<tr>
<td>Development footprint</td>
<td>The construction and maintenance of infrastructure will cause minimal permanent disturbance to the community.</td>
</tr>
</tbody>
</table>

1.2 Project description

The Water Corporation’s South West Yarragadee Aquifer proposal involves extending the Integrated Water Supply Scheme (IWSS) into the south west to abstract 45 gigalitres of water from the aquifer each year. The new pipeline from the borefield at Jarrahwood will join the existing Stirling Trunk main near Harvey, about 110 kilometres north.

To access the South West Yarragadee Aquifer, a borefield will be established on the Blackwood Plateau, at Jarrahwood. The bores will be drilled at four sites to depths ranging from 300 – 1100 metres within areas of State forest. The bores will be located alongside existing logging tracks or roads, and pipelines will be buried in the shoulder of existing roads to minimise clearing. Underground power will supply the bores, to minimise impacts and the risk of power failure.

The water will be treated to meet strict public water supply quality standards before being piped along a route running approximately parallel to the coast, passing just to the west of Boyanup and Brunswick Junction.

The IWSS will, over time, potentially be expanded because the pipeline will pass near major south west population centres and other infrastructures, such as the Kemerton Industrial Park (Water Corporation, 2005e).

Subject to receiving regulatory approval, construction would take 18 months, with anticipated commissioning in late 2009.

1.3 Study area

While the project is relevant to all potential users of the IWSS – 1.5 million of Western Australia’s almost two million people – the study has primarily focussed on the City of Bunbury, and the towns of Busselton, Augusta, Margaret River, Nannup and the Scott Coastal Plain farming community. The early and continued focus on these communities was based on their proximity to the aquifer, and/or from their proximity to resources of perceived high social value such as the Lower Blackwood River, and the Margaret River wine industry.
The first map below shows the location of borefield, treatment plant, and proposed pipeline route, and the second map shows the boundaries of the aquifer (east and west), and the location of the study areas.

The study did not extend to the communities east of Nannup which are experiencing serious water supply problems because, as depicted on the map, they are outside of the aquifer zone. The needs of these seven communities – Bridgetown, Boyup Brook, Greenbushes, Hester, Balingup, Mullalyup and Kirup – are being addressed through an integrated Regional Water Supply upgrade concurrent with this proposal.

The study did not include the Jarrahwood community, but recognises that this community (where the treatment plant would be located) would have a number of issues to resolve with Water Corporation if the proposal progresses.
1.4 Study approach and methodology

The steps in social impact assessment include (Burdge, 2004a, p. 30):
1. Community scoping and profiling, including identification of the existing environment, and identification of social variables of interest
2. Scoping of impacts and projection of estimated effects
3. Recommendations for mitigation, remediation and enhancement, and monitoring

Phase one: Community scoping and profiling

Phase one comprised several key activities: definition of the existing environment in each community; generic identification of the effects typically associated with this type of project; on the ground community scoping and profiling to understand the relevant issues; and identification of social impact issues for analysis.

Multiple data sources both secondary and primary have been accessed in this activity: telephone and community surveys undertaken by WRC and the Water Corporation; more than 85 interviews with interest groups, business and community groups, local residents and other stakeholders in the south west (see Appendix 1 for list of interviewees); presentation and discussion of findings at Community Reference Group meetings to gather additional feedback; reports from earlier studies related to this project; literature reviews; Australian Bureau of Statistics information, demographic and economic characteristics; and planning reports generated by the communities themselves. Additional information sources included community submissions made during the public
comment period related to the Scoping Report (Strategen, 2005a). The 8-week public comment period ran from October 1 to November 30, 2004.

Multiple data sources have brought diverse viewpoints into the process, and have helped to validate viewpoints through triangulation. For example, community findings from the scoping phase were discussed at Community Reference Group meetings to test accuracy of conclusions drawn.

The community interviews in the south west followed a discussion guide (see Appendix 2 for a copy of interview questions), and covered these questions:

- Their community – aspirations, current issues, current priorities, issues in relation to water in general and the Yarragadee proposal specifically.
- Community views about the proposal and what’s driving those views
- Risks and benefits of the proposal
- Acceptability of the risk, and what might change the view of acceptability
- Notion of reasonable regional needs
- How to safeguard community interests
- Community views about how changes could be managed to optimise desired outcomes

The outcome of this phase was identification of three social impact issues -- sense of place and social values, futures foregone, and benefit and equity in relation to water access -- for further analysis in phase two.

A values-based approach was used in phase one, particularly in relation to the design and analysis of the community interview component. Drawing from the work of Kelly (1955), we know that people use personal constructs (how they view the world) to understand life events, to make sense of their experiences, and to drive behaviour. Core personal constructs are the same as values (Horley, 1991) and values are standards against which people evaluate things, people and ideas. The values-based approach acknowledges the importance of people’s personal constructs or perceptions in terms of how they believe they will be impacted by the Yarragadee proposal.

**Phase two: Social impact assessment**

Following identification of social impact issues in phase one, this phase required additional studies to fully understand the social impacts related to sense of place and social values, futures foregone, and benefit and equity in relation to water access.

Social impacts are defined by the Interorganizational Committee on *Principles and Guidelines for Social Impact Assessment* as:

> The consequences to human populations of any public or private actions that alter the ways in which people live, work, play, relate to one another, organise to meet their needs and generally cope as members of society. The term also includes cultural impacts involving changes to the norms, values and beliefs that guide and rationalise their cognition of themselves and their society (Burdge, 2004b, p. 3).
As this phase progressed, work was progressing also in the environmental and economic impact assessment studies and aquifer modelling. Those results were critical inputs to this SIA phase by helping to clarify:

- Areas of likely drawdown and extent of drawdown under a worst case scenario
-Extent of likely environmental impact under a worst case scenario
- Areas which appear unlikely to be affected

In addition, the project team was developing a conceptual approach to Reasonable Regional Needs, and the extension of the IWSS infrastructure further into the south west. These were relevant to the assessment of issues of futures foregone, and benefit and equity in relation to water access.

This phase involved more stakeholder contact to obtain specific information on social impacts (see list in Appendix 3), and review of academic and research literature covering past studies of the tourism industry in the South West, studies from the Regional Forest Agreement process, heritage and cultural studies, regional planning studies, maps, government policies and management plans, and data from the Australian Heritage Database and the Heritage Council of Western Australia.

This phase also involved a more detailed study of Nannup. In the phase one research, some community members identified Nannup as the community most vulnerable to impact through this proposal. Its proximity to the Blackwood River – a resource of perceived high social value – provided a second rationale for examining any potential impact on Nannup through this proposal. A third rationale is the potential for social impact on the Scott Coastal Plain, which is a major agricultural community within the Nannup Shire. This detailed study drew on Australian Bureau of Statistics census data for the years 1991, 1996 and 2001, supplemented by interviews with several community development leaders in Nannup. Secondary data sources included: regional planning documents (e.g., Warren-Blackwood Regional Planning Strategy; Warren-Blackwood Rural Strategy), social impact studies conducted for the RFA, and literature on resource-dependent communities.

The views of the Perth market were also explored at this stage through focus group discussions. These group discussions came late in the process to take advantage of information from the extensive environmental research studies and aquifer modeling.

*Phase three: Recommendations for monitoring and mitigation of social impacts*

This phase focused on developing mitigation and management options for the social impacts related to the proposal. Preliminary ideas about monitoring and mitigation, and the community’s expectations in relation to these, came from the community interviews in phase one. These ideas were then considered alongside the social impacts identified in phase two, and drawing on experiences from other communities who have faced change.
1.5 Key Stakeholders

The social impact assessment has focussed on local communities in the study area, and these communities are the key stakeholders in the proposal – Nannup, Augusta, Margaret River, Busselton and Bunbury, and the Scott Coastal Plain farmers. The Perth region is also a key stakeholder in the project.

The social factor on “Indigenous communities” requires the detailed consideration of issues relevant to Noongar communities. Material from a Cultural Values Study commissioned by Water and Rivers Commission (Goode, 2003) is quoted in this document, and provides useful information about heritage and cultural values associated with the proposal. However, the work to understand social impacts of the proposal on indigenous communities is still being undertaken and will be reported in a separate report when completed, not as part of this Social Impact Assessment.
2. KEY SOCIAL ISSUES EMERGING FROM PREVIOUS WORK

2.1 Waters and Rivers Commission issues scoping

Prior to this sustainability evaluation by the Water Corporation, Water and Rivers Commission (WRC) undertook a significant community involvement and social analysis process to identify issues, as part of its process to develop a management plan for the South West Yarragadee.

The views of 400 – 450 people were gathered through a number of community mechanisms, culminating in the WRC Issues Scoping Paper (March 2003). The Paper identified five social issues (p. 18, Table 4).

Table 1: Social issues

<table>
<thead>
<tr>
<th>Issue</th>
<th>Background</th>
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</thead>
</table>
| Aboriginal heritage and cultural issues | • Aborigines have lived here for 50,000 years without seeing man-made disasters  
• Water is sacred in Aboriginal culture. The impact on this sanctity in general, as well as the impact on Aboriginal heritage sites, requires investigation.  
• Are there native title or heritage act implications that need to be addressed?  
• This proposal is considered to be ‘mining’ by Aborigines. Are there royalty implications? |
| European heritage values           | • What heritage implications for the non-aboriginal community exist?                                                                         |
| Swimming/ Fishing/ other recreational values | • Recreation considered central to this region. The Nannup public briefing in particular noted the centrality of springs and waterways to the social structure. The community wants assurance that this proposal and the water allocation planning do not impinge on their social and recreational activities. |
| Impact on recreational reserves    | • Will there be direct impacts upon places of recreation?                                                                                   |
| Social justice and equity issues   | • This relates directly to the philosophical notion of ‘our water’ and the perception that water and wealth will be transferred out of the region. Numerous concerns relating to equity within this context were raised. |

These social issues helped to scope subsequent investigations on the Yarragadee proposal.

2.2 Water and Rivers Commission social values surveying

As part of the Water and Rivers Commission’s community involvement and social analysis process, a Social Values and Impact Study was commissioned by WRC and undertaken by the Australian Research Centre for Water in Society (ARCWIS, 2003).
The aims of the study (2003, p. 1) were to:

- Identify the social values associated with the water resources of the Blackwood Groundwater Area and their importance;
- Assess how those values may be affected by human use of the water, both in situ and if withdrawn, including withdrawal and export from the region; and
- Examine the attitudes people have towards the proposal, and the circumstances in which attitudes may change.

The study comprised two separate surveys: a telephone survey of 414 south west residents, which was the primary focus of the study, and a short complementary telephone survey with 316 Perth residents.

### 2.2.1. Key findings from the south west survey

**Groundwater use values**

Respondents rated use of groundwater in order of importance, as shown in Table 2 below. Groundwater to maintain the natural environment was rated the most important, followed by use of groundwater for regional priorities – household use and provision for future use.

Table 2: Important rating of general uses for groundwater (p. 11)

<table>
<thead>
<tr>
<th>Groundwater for .....</th>
<th>Mean importance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural environment</td>
<td>18.70</td>
</tr>
<tr>
<td>Regional household use</td>
<td>17.36</td>
</tr>
<tr>
<td>Future use in the region</td>
<td>15.88</td>
</tr>
<tr>
<td>Irrigation</td>
<td>15.66</td>
</tr>
<tr>
<td>Recreational use</td>
<td>12.07</td>
</tr>
<tr>
<td>Industrial use in the region</td>
<td>11.69</td>
</tr>
<tr>
<td>Household use outside the region</td>
<td>8.66</td>
</tr>
</tbody>
</table>

Specific uses of groundwater within the natural environment were seen as similarly important (see Table 3).

Table 3: Important ratings of aspects of the natural environment supported by groundwater (p. 7)

<table>
<thead>
<tr>
<th>Natural Environmental Use of Groundwater</th>
<th>Mean importance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blackwood River</td>
<td>20.83</td>
</tr>
<tr>
<td>Wetlands, including Lake Jasper</td>
<td>20.46</td>
</tr>
<tr>
<td>Animals and birds in the wild</td>
<td>20.30</td>
</tr>
<tr>
<td>Natural vegetation</td>
<td>19.35</td>
</tr>
<tr>
<td>Forests in conservation areas</td>
<td>19.05</td>
</tr>
</tbody>
</table>

Specific uses of groundwater for regional household use of groundwater produced some differentiations in preferences (see Table 4).
Table 4: Important ratings of groundwater for regional household uses (p. 8)

<table>
<thead>
<tr>
<th>Regional Household Use of Groundwater</th>
<th>Mean importance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Household use for towns in the Blackwood Groundwater Area (e.g. Nannup, Margaret River, Augusta)</td>
<td>22.85</td>
</tr>
<tr>
<td>Household and stock use for rural properties in the region</td>
<td>22.59</td>
</tr>
<tr>
<td>Household use for Busselton and Dunsborough</td>
<td>19.19</td>
</tr>
<tr>
<td>Household and stock use for special rural properties in the region</td>
<td>19.09</td>
</tr>
<tr>
<td>Household use for Bunbury</td>
<td>16.28</td>
</tr>
</tbody>
</table>

The importance of future uses for groundwater is shown in Table 5 below.

Table 5: Important ratings of future uses for groundwater in the region (p. 10)

<table>
<thead>
<tr>
<th>Future Use of Groundwater in the Region</th>
<th>Mean importance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Future environmental needs if there is climate change</td>
<td>24.18</td>
</tr>
<tr>
<td>Future population growth of towns in the region</td>
<td>23.39</td>
</tr>
<tr>
<td>Future needs of existing industries</td>
<td>19.80</td>
</tr>
<tr>
<td>Future needs of new industries</td>
<td>16.39</td>
</tr>
<tr>
<td>Future needs of increased tourist and visitor numbers</td>
<td>16.24</td>
</tr>
</tbody>
</table>

Personal and intrinsic groundwater values

Respondents identified aspects of the natural environment supported by groundwater (Table 6) and activities (Table 7) that they personally thought were important. The results demonstrate the importance of both the groundwater itself and the environment generally. That is, the community appears to value the resource simply because it is “there” and part of the environment.

Table 6: Aspects of the natural environment supported by groundwater of greatest importance to respondents (p. 14)

<table>
<thead>
<tr>
<th>Important Aspects of Environment supported by Groundwater</th>
<th>Frequency of response (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All of it/all inter-related</td>
<td>32.5</td>
</tr>
<tr>
<td>Forests</td>
<td>25.5</td>
</tr>
<tr>
<td>Fauna and flora</td>
<td>23.1</td>
</tr>
<tr>
<td>Sustaining the eco-system</td>
<td>22.1</td>
</tr>
<tr>
<td>Lakes and wetlands</td>
<td>21.8</td>
</tr>
<tr>
<td>Rivers and streams</td>
<td>21.1</td>
</tr>
</tbody>
</table>

Table 7: Activities in the natural environment supported by groundwater of greatest importance to respondents (p. 14)

<table>
<thead>
<tr>
<th>Important Environmental Activities supported by Groundwater</th>
<th>Frequency of response (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bushwalking</td>
<td>35.0</td>
</tr>
<tr>
<td>Water sports/swimming</td>
<td>34.7</td>
</tr>
</tbody>
</table>
Fishing &nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp; 34.5
Enjoying the scenery &nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp; 28.6
Picnicking and camping &nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp; 7.9
Tourism/recreation &nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&n
Confidence and trust

Attitudinal measurements showed that the community had little trust and certainty in the ability of authorities’ and experts to plan and make appropriate decisions for the future.

Fairness in water allocation

In examining fairness in water allocation, there was strong agreement throughout the community for everyone to have a say in water allocation. The south west community also identified a need for long-term sustainable management over short term gains, and the requirement for efficient water use.

2.2.2 Key findings from the Perth survey

The Perth survey was a short complementary survey. The findings of this survey were consistent with those of the South West survey.

Preferred water sources

Perth respondents considered the Yarragadee option (presented as ‘the export of Blackwood groundwater for Perth use’) to be a least favoured source, along with storing wastewater in aquifers for future use. Reuse options and desalination were the most favoured sources of the seven offered for consideration. The researchers’ view (p. 47) was that this result “is a statement that sources ‘closer to home’ are preferred over ‘taking other people’s water’.”

Level of support for the proposal and what this support is based on

The study (p. 42) asked respondents whether water should be supplied for Perth use from SW Yarragadee. Responses were: Yes – 30.4%, Unsure – 20.6%, and No – 49.1% -- a higher level of support than that achieved from the south-west survey.

The 51% (yes or unsure) were then asked if they still believed in supplying this water to Perth:

• If it was not known what effects taking water from the area would have on regional environment
• If local people were not involved in making the decision
• If it meant that people with existing groundwater allocations could lose some of their water in the future
• If there was insufficient groundwater to meet future regional development needs
• If it could be shown that Perth people were wasting water
• If it was not helpful in promoting a policy of decentralisation

The study comments that (p. 43): “Again it was the issues of (un)certainty (environmental effects and future regional uses), water use efficiency and the decision making process that had the greatest effect on people’s decisions.”
The 49% of respondents who said no or unsure were then asked if they would still refuse to provide this water to Perth:

- If it meant that the region could profit by selling the water to Perth
- If it meant that Perth people would have increased water restrictions to total sprinkler bans
- If it meant that Perth people would have to pay more for other sources of water
- If local people had a say in the management and monitoring of the aquifer
- If it could be shown that there was sufficient groundwater to meet future development needs in the region?

The first three points listed had the least effect on decisions, and issues associated with certainty and process were seen to be more relevant – for example, if the decision could be reversed, if there was enough groundwater for future needs, and if local people had a say. Support for the proposal markedly increased to almost two-thirds of the total sample if the future needs of the south west could be guaranteed.

The export of Blackwood groundwater to Perth was seen to be less than fair to the people of the South West.

This research established benchmarks for community views on the proposal, and identified areas to be addressed in developing the final proposal.

2.3. Water Corporation issues scoping and consultation

Following the Government’s decision to ask Water Corporation to undertake further study on the sustainability of the proposal, a draft Scoping Report was produced by Strategen, on behalf of Water Corporation in September 2004 to outline the extent of studies to be done.

The Corporation committed to consult with key stakeholders and the broad south west community throughout the evaluation process, and commenced the consultation process by establishing a Community Reference Group which met regularly since September 2004. Areas in which the group has contributed include:

- design of community involvement processes
- review of the principles, factors and objectives proposed in the Draft Scoping Report
- development of risk management options
- development of mitigation measures and opportunities for positive outcomes
- development of reporting and monitoring requirements.

The draft Scoping Report incorporated a consultation phase prior to submission to the EPA, to determine whether the factors identified for study will focus investigative effort on aspects of the project which are important to be considered. The draft Scoping Report released for public comment and review during October and November 2004, with comments closing on 30 November 2004. Thirty-five submissions were received.
To assist the gathering of community comment on the draft Scoping Report, the Corporation ran a series of community “walk-in” information sessions, held in seven different towns through the region during late October 2004. Interested community members were able to drop in to talk to Water Corporation staff about the project, pick up a copy of the draft Scoping Report, ask questions and provide comment. In addition, the following communication channels were used:

- Advertising in south west (print & radio) and Perth media;
- Information on the website;
- Summary scoping report into public libraries and Council offices;
- Display at Augusta Community Development Association Planning Day (October 31st) – *some interaction with attendees*;
- Display erected and manned at Margaret River Agricultural Show (November 12 & 13) – *detailed discussion with approx 100 people*;
- Public information walk-in sessions and stakeholder briefings – *detailed discussion with 120 attendees*;
- Briefings of key stakeholder groups (ongoing); and
- Comment received through Community Reference Group.

A comprehensive market survey (Market Equity, 2004) of 300 south west respondents was completed during December 2004 to test the level of community awareness of the proposal and the completeness of the Scoping Report (see section below).

The market research showed that 4 out of every 5 South West residents surveyed believe that the proposed investigations cover all the necessary issues for consideration. High levels of support existed for the topics and factors to be investigated (78%), and there was a 60% confidence that the investigation addressed the appropriate issues, information and factors. Therefore, major changes to the Scoping Report were not required.

However, a number of changes were made to the Scoping Report following review of the submissions. The most significant of these was the addition of a ninth principle regarding regional needs, as this was shown to be a particular area of concern within the South West.

### 2.4 Water Corporation survey

Water Corporation undertook market research in late November/early December 2004 (Market Equity, 2004) in the Shires of Nannup, Augusta/Margaret River, Busselton, and the City of Bunbury. While the primary aim of the research was to test the content and relevance of the scoping document, the research also aimed to:

- Establish the level of awareness in South West communities of the proposal and the investigation.
- Understand what effects the South West communities believe the project would have if it proceeds.
On these points the key findings were:

- The majority of South West residents (70%) are aware of the proposal to use the Yarragadee Aquifer as a new water source. Awareness was high in Nannup (99%) and Augusta/Margaret River (89%), and the relatively low in Bunbury (50%).
- In terms of support for the proposal, 21% of respondents expressed some degree of support; 35% were unsure, and 44% did not support the proposal. This compares to the WRC survey in June 2003 (see Section 2.2) where support was 12%, 8% were unsure, and 80% did not support the proposal.
- The majority (60%) have heard of the investigation being conducted by the Water Corporation, with the highest awareness from respondents from the Shire of Nannup (81%).
- The health of the environment is clearly the key issue that residents feel needs to be considered in the investigation. Priority issues were the impact on the environment, and sustainability of the water source. Other important issues identified were: why should Perth people have our water; impact on farms and local community; and suggestions for alternative water sources.
- Over half (58%) believe that there will be changes to their local community if the proposal was to proceed. Those predicting change typically felt that the proposal would have a negative impact, such as:
  - a reduction in water levels/quality.
  - problems for farmers arising from salinity.

2.5 Conclusions

These studies were helpful in identifying community concerns and issues that they believed needed to be addressed by the proposal. The advantage of obtaining a good level of community input prior to finalisation of the proposal is that the proposal can be adapted to accommodate those concerns.
3. PHASE ONE: SCOPING THE EXISTING ENVIRONMENT

Phase one comprised several key activities: definition of the existing environment in each community in the study area; generic identification of the effects typically associated with this type of project; on the ground community scoping and profiling to understand the relevant issues; and identification of social impact issues for analysis.

3.1 Study area demographic overview

The south west is a region that is undergoing change as are many rural communities across Australia. The communities are dealing with transition, changes to the traditional rural economy, coping with changing demographics, and looking at transitions to new economic bases. As a general experience, communities are seeing young people leaving to seek improved education and employment opportunities in larger centres, while at the same time they experience an influx of older people, at both retirement and pre-retirement age, seeking lifestyle changes. As concluded by the Regional Forest Agreement study (Social Assessment Unit, 1998, p. 135): “while a shire’s population may remain relatively stable overall, the rather rapid influx of different ideas and beliefs is contributing to social and cultural change in many small communities”.

This creates a host of planning and development issues related to:

- Defining and self-determination of regional and local destiny
- Identifying, acknowledging and protecting assets
- Ensuring that development is in line with what communities want
- Ensuring that development doesn’t destroy what attracts people to the area.

The demographic characteristics selected for the analysis included those associated with projecting water supply needs (e.g., population growth, employment sectors) for communities in the study area. An analysis of Nannup was also conducted for those variables reflecting community vitality (e.g., age structure, employment rates).

Population

Although the population in each of the locations grew over the period (1991-2001) there were significant differences in the rate of growth (Table 8). The Shire of Nannup’s growth rates were comparable with those of the nation, the state and even Bunbury over the same time periods. However they were much lower than those of the shires of Augusta-Margaret River and Busselton which demonstrated dramatic population growth and contributed to the significant growth rate for the region as a whole.

The driver for population growth in Greater Bunbury is largely industrial development, while in Busselton and Margaret River the drivers are related to lifestyle, tourism and the wine industry. Augusta-Margaret River’s population growth between 1991 and 2001 exceeded that of the Busselton Shire, and of the South West region. Within the Augusta-Margaret River Shire however, Augusta is growing at a slower rate than Margaret River.
### Table 8. Population growth

<table>
<thead>
<tr>
<th>Location</th>
<th>2001</th>
<th>1996</th>
<th>1991</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shire of Nannup</td>
<td>1,197</td>
<td>1,144</td>
<td>1,084</td>
</tr>
<tr>
<td>Shire of Augusta-Margaret River</td>
<td>9,852</td>
<td>8,047</td>
<td>5,875</td>
</tr>
<tr>
<td>Greater Bunbury</td>
<td>46,913</td>
<td>40,509</td>
<td>36,353</td>
</tr>
<tr>
<td>Bunbury^a</td>
<td>28,682</td>
<td>26,556</td>
<td>25,676</td>
</tr>
<tr>
<td>Capel (S) Pt A</td>
<td>2,655</td>
<td>2,144</td>
<td>1,704</td>
</tr>
<tr>
<td>Dardanup (S) Pt A</td>
<td>5,980</td>
<td>4,206</td>
<td>3,141</td>
</tr>
<tr>
<td>Harvey (S) Pt A</td>
<td>9,596</td>
<td>7,603</td>
<td>5,832</td>
</tr>
<tr>
<td>Shire of Busselton</td>
<td>22,060</td>
<td>17,490</td>
<td>13,514</td>
</tr>
<tr>
<td>South West Statistical Division</td>
<td>181,923</td>
<td>160,220</td>
<td>134,645</td>
</tr>
<tr>
<td>Western Australia</td>
<td>1,851,300</td>
<td>1,765,300</td>
<td>1,636,100</td>
</tr>
<tr>
<td>Australia</td>
<td>18,972,350</td>
<td>17,892,400</td>
<td>17,284,000</td>
</tr>
</tbody>
</table>

(a) The South West Statistical Division includes the following Statistical Subdivision: Dale, Preston, Vasse and the Blackwood (this includes the Shires of Nannup and Augusta-Margaret River).
(b) Applicable to persons aged 15 years and over
(c) Includes overseas visitors
(d) Identified as Bunbury (c) on the map
(e) Bunbury ABS SSD

In the period 2001-2006, Nannup’s population is projected to grow by between 0.3% (low growth scenario) and 25.3% (high growth scenario). This equates to a 2006 population of between 1,200 and 1,500 persons. During the same period (2001-2006), the Shire of Busselton is projected to grow by 8.8%-34.2%; the Shire of Augusta-Margaret River by 18.8%-22.8%, and Bunbury by 2.5%-6.0% (WAPC 2000).

### Table 9. Low, medium and high population scenarios for Local Government Areas (2006-2016)

<table>
<thead>
<tr>
<th>Location</th>
<th>2001*</th>
<th>2006</th>
<th>2011</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>Medium</td>
<td>High</td>
<td>Low</td>
<td>Medium</td>
</tr>
<tr>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
<tr>
<td>Shire of Nannup</td>
<td>1,197</td>
<td>1,200</td>
<td>1,400</td>
<td>1,500</td>
</tr>
<tr>
<td>Shire of Augusta-Margaret River</td>
<td>9,852</td>
<td>11,700</td>
<td>12,100</td>
<td>13,100</td>
</tr>
<tr>
<td>Shire of Busselton</td>
<td>22,060</td>
<td>24,000</td>
<td>27,000</td>
<td>29,600</td>
</tr>
<tr>
<td>Bunbury</td>
<td>28,682</td>
<td>29,400</td>
<td>30,000</td>
<td>30,400</td>
</tr>
</tbody>
</table>

n.a. – not available beyond 2006 as the population is less than 2000 persons.
* 2001 are actual census data.

Between 2001 and 2016, the Shire of Busselton is projected to grow in the range 31.0%-118.5%. By 2016 the Shire’s population is projected to be between 28,900 and 48,200. In the period 2001-2016, the Shire of Augusta-Margaret River’s population is projected to grow by between 51.2% and 62.4%. This equates to a 2016 population of between 14,900 and 16,000 persons. During the same time period, Bunbury is projected to grow by between 9.3% and 17.7%. This equates to a 2016 population of between 31,300 and 33,700 persons.

Age
The age profile of the Shire of Nannup is very similar to that of the Shire of Augusta-Margaret River (Table 10). In relation to Nannup, a number of planning documents have noted its aging population (e.g., DPI 2001). This trend is seen throughout the Western World, and is expected to mean “an increasing demand on health related services, and changing demand for smaller, more manageable, housing types” (DPI 2001, pg. 5).

Table 10. Population by Age Group

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Shire of Nannup</th>
<th>Shire of Augusta-Margaret River</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-4</td>
<td>5.0%</td>
<td>7.8%</td>
</tr>
<tr>
<td>5-19</td>
<td>23.2%</td>
<td>23.9%</td>
</tr>
<tr>
<td>20-29</td>
<td>7.8%</td>
<td>9.0%</td>
</tr>
<tr>
<td>30-59</td>
<td>48.4%</td>
<td>45.5%</td>
</tr>
<tr>
<td>60 and over</td>
<td>15.7%</td>
<td>13.2%</td>
</tr>
</tbody>
</table>

**Employment**

Unemployment rates vary across these communities. In the period 1991-1996, the unemployment rate in the Shire of Nannup was higher than in other areas (Table 4). However by 2001, the Shire’s unemployment rate (8.5%) had dropped significantly and was better than Bunbury’s (9.6%). However unemployment rates still lagged behind those of the shires of Busselton (6.8%) and Augusta-Margaret River (5.7%).

The decrease in Nannup’s unemployment rate is interesting. The Social Assessment Unit’s SIA (1998) predicted the Regional Forest Agreement would hurt employment levels, in particular the Shire of Nannup, as many individuals in the region were employed in the timber industry. The 2006 census will provide a clearer picture of the impact of the RFA.

Table 11. Unemployment rates

<table>
<thead>
<tr>
<th></th>
<th>Unemployment rate&lt;sup&gt;b&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shire of Nannup</td>
<td>8.5%</td>
</tr>
<tr>
<td>Shire of Augusta-Margaret River</td>
<td>5.7%</td>
</tr>
<tr>
<td>Bunbury&lt;sup&gt;c&lt;/sup&gt;</td>
<td>9.6%</td>
</tr>
<tr>
<td>Shire of Busselton</td>
<td>6.8%</td>
</tr>
<tr>
<td>South West Statistical Division&lt;sup&gt;a&lt;/sup&gt;</td>
<td>8.7%</td>
</tr>
<tr>
<td>Western Australia</td>
<td>7.5%</td>
</tr>
<tr>
<td>Australia</td>
<td>7.4%</td>
</tr>
</tbody>
</table>

(a) The South West Statistical Division is inclusive the following Statistical Subdivision: Dale, Preston, Vasse and the Blackwood (this includes the Shires of Nannup and Augusta-Margaret River).
(b) Applicable to persons aged 15 years and over
(c) Identified as Bunbury (c) on the map

During the 1991-1996, the labour force participation rates have shown a slight improvement in all areas (Table 12). The Shire of Busselton had lagged behind the other areas in 1991 (39.1%) but by 2001 had improved to 46.2%, close to the Shire of Nannup’s participation rate (47.8%).
Table 12. Population in the Labour Force

<table>
<thead>
<tr>
<th></th>
<th>Labour force(^b)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shire of Nannup</td>
<td>47.8%</td>
</tr>
<tr>
<td>Shire of Augusta-Margaret River</td>
<td>50.8%</td>
</tr>
<tr>
<td>Bunbury(^c)</td>
<td>48.7%</td>
</tr>
<tr>
<td>Shire of Busselton</td>
<td>46.2%</td>
</tr>
<tr>
<td>South West Statistical Division(^a)</td>
<td>45.3%</td>
</tr>
<tr>
<td>Western Australia</td>
<td>48.4%</td>
</tr>
<tr>
<td>Australia</td>
<td>47.2%</td>
</tr>
</tbody>
</table>

(a) The South West Statistical Division is inclusive the following Statistical Subdivision: Dale, Preston, Vasse and the Blackwood (this includes the Shires of Nannup and Augusta-Margaret River).
(b) Applicable to persons aged 15 years and over
(c) Identified as Bunbury (c) on the map

Employment by Industry

There is a larger proportion of population employed by the construction industry in the Shire of Augusta Margaret River. This may be in part due to their growing population, and hence a need to accommodate the growth. The employment sector described as agriculture, forestry and fishing dominates the economic profile of the Shire of Nannup (Table 13).

Table 13. Employment by Industry

<table>
<thead>
<tr>
<th></th>
<th>Shire of Nannup</th>
<th>Shire of Augusta Margaret River</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture, Forestry and Fishing</td>
<td>23.7%</td>
<td>19.3%</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>12.7%</td>
<td>17.1%</td>
</tr>
<tr>
<td>Construction</td>
<td>5.1%</td>
<td>7.2%</td>
</tr>
<tr>
<td>Retail Trade</td>
<td>6.5%</td>
<td>6.9%</td>
</tr>
<tr>
<td>Accommodation, Cafes and Restaurants</td>
<td>10.1%</td>
<td>9.1%</td>
</tr>
<tr>
<td>Property and Business Services</td>
<td>4.2%</td>
<td>2.3%</td>
</tr>
<tr>
<td>Government Administration and Defence</td>
<td>5.1%</td>
<td>2.9%</td>
</tr>
<tr>
<td>Education</td>
<td>7.6%</td>
<td>11.2%</td>
</tr>
<tr>
<td>Health and Community Services</td>
<td>8.1%</td>
<td>7.8%</td>
</tr>
</tbody>
</table>

Income

In terms of individual weekly income, Bunbury is the highest ($410/week), and the Shire of Nannup ($297/week) is the lowest (Table 14). This contrasts with the Shire of Augusta-Margaret River where the median weekly individual income in 2001 ($372/week) is similar to that of the State and better than the South West region ($329/week).
Table 14. Median weekly individual income

<table>
<thead>
<tr>
<th>Area</th>
<th>2001</th>
<th>1996</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shire of Nannup</td>
<td>$297</td>
<td>$200-$299</td>
</tr>
<tr>
<td>Shire of Augusta-Margaret River</td>
<td>$372</td>
<td>$200-$299</td>
</tr>
<tr>
<td>Bunbury</td>
<td>$410</td>
<td>$200-$299</td>
</tr>
<tr>
<td>Shire of Busselton</td>
<td>$347</td>
<td>$200-$299</td>
</tr>
<tr>
<td>South West Statistical Division</td>
<td>$329</td>
<td>$265</td>
</tr>
<tr>
<td>Western Australia</td>
<td>$374</td>
<td>$307</td>
</tr>
<tr>
<td>Australia</td>
<td>$375</td>
<td>$292</td>
</tr>
</tbody>
</table>

(a) The South West Statistical Division is inclusive the following Statistical Subdivision: Dale, Preston, Vasse and the Blackwood (this includes the Shires of Nannup and Augusta-Margaret River).
(b) Applicable to persons aged 15 years and over
(c) Identified as Bunbury (c) on the map

Education

Those receiving a bachelor’s degree or higher is lower in each of the areas identified when compared to the State as whole (Table 15). However, there are higher numbers for advanced diplomas, diplomas and certificates in Augusta-Margaret River and Nannup when compared to the State.

Table 15. Level of Education (2001)

<table>
<thead>
<tr>
<th>Highest Level of Education²</th>
<th>Bachelor’s degree or &gt;</th>
<th>Advanced Diploma and Diploma</th>
<th>Certificate</th>
<th>Year 12</th>
<th>Year 11</th>
<th>Year 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shire of Nannup</td>
<td>6.7%</td>
<td>6.1%</td>
<td>11.5%</td>
<td>24.6%</td>
<td>9.3%</td>
<td>24.3%</td>
</tr>
<tr>
<td>Shire of Augusta-Margaret River</td>
<td>9.2%</td>
<td>5.5%</td>
<td>14.6%</td>
<td>30.0%</td>
<td>8.6%</td>
<td>21.6%</td>
</tr>
<tr>
<td>Bunbury</td>
<td>6.2%</td>
<td>4.0%</td>
<td>14.6%</td>
<td>22.4%</td>
<td>8.4%</td>
<td>25.7%</td>
</tr>
<tr>
<td>Shire of Busselton</td>
<td>7.2%</td>
<td>4.5%</td>
<td>14.0%</td>
<td>24.3%</td>
<td>8.9%</td>
<td>23.1%</td>
</tr>
<tr>
<td>South West Statistical Division</td>
<td>5.6%</td>
<td>3.9%</td>
<td>13.9%</td>
<td>21.0%</td>
<td>8.9%</td>
<td>25.3%</td>
</tr>
<tr>
<td>Western Australia</td>
<td>9.4%</td>
<td>5.0%</td>
<td>11.6%</td>
<td>29.8%</td>
<td>8.1%</td>
<td>20.9%</td>
</tr>
</tbody>
</table>

(a) Persons 15 years and older

3.1.1 Future of the area and changes already happening through non-project sources

The South West Development Commission (D. van Gent, pers. int., 2004) perceives three separate economic influences in the south west. The first relates to the population increase and resulting economic boosts from Australind down to Augusta, primarily on the coast.

The second relates to industrial development with major contributors being mining and minerals processing, agriculture and timber. The third is the economic scenario in inland towns of Manjimup, Donnybrook and Bridgetown. With a more traditional economic base of forestry and agriculture, some have been hard hit by timber and dairy fluctuations.
As at June 2002, 13 major industrial projects were under construction in the south west, valued at $462 million (WRC, 2003). Activity has continued to increase, with a high level of development across a number of sectors as at September 2004 (SWDC, 2004b). These projects are all independent of the Water Corporation’s South West Yarragadee project.

3.1.2 Effects typically related to large-scale water supply projects

Initial work by the CSIRO (2004c) has identified six broad benefit domains related to benefits derived from water:

a) Human health (healthy food, water borne diseases)
b) Ecosystem health (water quality, healthy riverine and coastal ecosystems)
c) Economic (water-related employment)
d) Social support (social capital, strong rural communities)
e) Choice and control (participating in decisions that affect them, perceived fairness, control over own water use)
f) Culture and identity (sense of place, recreation and cultural use of water bodies).

The CSIRO framework models that a change in water availability or water allocation results in a change in the quantity and potentially the quality of water across different uses, and changes in secondary social and economic variables. The prospect of reduced availability of water could have the following effects:

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Imagined Consequences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brown environment</td>
<td>Reduced environmental amenity</td>
</tr>
<tr>
<td>Loss of livelihood</td>
<td>Futures foregone</td>
</tr>
<tr>
<td>Impact on ecosystem health</td>
<td>Reduced eco-system</td>
</tr>
<tr>
<td>People leaving the land</td>
<td>Decline in rural communities</td>
</tr>
<tr>
<td>Reduced control over own water use</td>
<td>Decline in rural communities</td>
</tr>
<tr>
<td>Reduced ability to use water bodies for recreation</td>
<td>Decline in sense of place</td>
</tr>
<tr>
<td>Impact on the Blackwood</td>
<td>Decline in sense of place</td>
</tr>
<tr>
<td>Impact on eco-tourism</td>
<td>Futures foregone</td>
</tr>
</tbody>
</table>

An expanded water supply system could lead to a different set of effects and perceptions:

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Imagined Consequences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green environment</td>
<td>Increased environmental amenity</td>
</tr>
<tr>
<td>Enhanced economic opportunities</td>
<td>Economic growth in the region</td>
</tr>
<tr>
<td>Maintenance of or improvement to current eco-systems</td>
<td>Protection of eco-systems</td>
</tr>
<tr>
<td>Stronger rural communities</td>
<td>Increased social capital &amp; job opportunities for youth</td>
</tr>
<tr>
<td>Self-determination re water use</td>
<td>Economic growth and viable communities</td>
</tr>
<tr>
<td>Continued recreational use of water bodies</td>
<td>Sense of place and social values maintained</td>
</tr>
<tr>
<td>Enhanced sense of place</td>
<td>Social capital</td>
</tr>
</tbody>
</table>
3.2 AUGUSTA

3.2.1 Existing environment

Augusta is one of two major towns within the Shire of Augusta-Margaret River. It is 320km south of Perth and 43km south of Margaret River, and is the most south-westerly town in WA and one of WA’s oldest settlements. It is located at the mouth of the Blackwood River on the shores of Hardy Inlet and Flinders Island and is a popular holiday destination for swimming, surfing, fishing, diving, and boating, as well as scenic trips to discover wildlife such as whales, dolphins, seals and pelicans. The Augusta postal area comprises the following localities: Augusta, Deepdene, East Augusta, Kudardup, Leeuwin, and Molloy Island.

The Augusta postal area has a population of approximately 1500 people. Two-thirds of the Augusta region population is located in the town – approximately 1000 people -- with the remaining one-third in the rural areas (ABS, 2003).

The median age in Augusta (ABS, 2003) is approximately 47 years – 16 years higher than in Margaret River, and 12 years higher than the Shire average. Almost 25% of the Augusta population is aged 65 and over, a much higher percentage compared to other towns in the Shire. Augusta also has the lowest proportion of people under 15 years (approximately 16 – 17%), being over 6% below the shire average. (ABS 2003).

The breakdown between urban and rural living in Augusta shows that a higher percentage of the population aged over 60 years live in urban areas, while a greater percentage of the younger population (aged under 60 years) lives in rural areas. There is a high absentee population of holiday residents, and a large number of “grey ghosts” who head north for summer and come south in the winter.

Employment in Augusta is in the industries of Agriculture, Forestry and Fishing (approx 17%); the Retail Trade (approx 16%); and Accommodation, Cafes and Restaurants (approx 12%) (ABS 2001).

Water sources

The town’s water supply comes from two sources: Leeuwin Spring, located at Cape Leeuwin, near the Lighthouse; and Lesueur Formation – groundwater extracted from a deep bore into the Leederville aquifer and treated in the Fisher Road area north east of the town. Each source has its own water treatment plant.

The town reticulation is partitioned so that water from the two sources does not mix and, although water availability is not an issue, the area served from Leeuwin Springs represents a water quality issue as the water is ‘hard’. This hardness does not exceed the NH&MRC Drinking Water Guidelines but does cause some dissatisfaction from the Corporation’s customers as it affects bathroom appliances and fittings. Water availability is unlikely to become an issue as the pipeline could be extended from the Fisher Road
bore to provide additional water. Therefore water availability is not deemed to be a limiting factor in the community’s development now or into the future.

3.2.2. Community aspirations and issues

The Augusta Healthy Communities Planning Day – October 2004

Augusta convenes community planning days regularly, with the most recent being held in October 2004. The Augusta Healthy Communities Planning Day resulted from a partnership between:
- The South West Healthy Communities Project,
- The South West Development Commission,
- The Augusta Community Development Association, and
- The Shire of Augusta-Margaret River.

The Augusta Healthy Communities Planning Day was based on the theme of “Revitalising, renewing, integrating and building on Augusta’s achievements and assets” to promote long-term economic health and well-being. Community health results from action to promote healthy conditions in the natural (eg. water, oceans, flora and fauna), built (eg. townscape, walkways, roads), economic (eg. commercial, tourism, business viability) and social (eg. housing, jobs, family support, education, recreation) environments (ACDA, 2004b).

Community aspirations discussed on the day included a list of 20 projects, 25% of which related to natural/environmental initiatives desired by the community. These included:

- Plan and build waterways and cycle paths to link town with natural assets
  - To build a new boat facility at Flat Rock
- To establish an Environment Centre that links existing and new projects and resources
- To ensure abalone farm/eco museum project goes ahead
- To open up the river mouth/ commission a feasibility on the reopening of the river mouth

Shire/CSIRO Sustainable Communities Project – Initial workshops June 2004

At a Shire level, the Augusta-Margaret River Shire is progressing with a joint Shire/CSIRO Sustainable Communities Project, to develop a community vision of sustainability that takes into account local economic, social and environmental values, and builds on previous and existing plans and visions for the region. In June 2004, ten community workshops were run in the region, three of which looked at the characteristics and needs of particular localities, while the remaining seven addressed specific topics such as agricultural intensification, community values, land use change and employment issues (CSIRO, 2004a, p. 4).
The Augusta workshop identified three broad categories of drivers of change and key actions within each:

- **Community spirit**, with key components being social cohesion and sense of belonging. Suggested actions:
  - Creating a more vibrant village centre
  - Creating a planning strategy around social cohesion
  - Conducting research into other similar regions to help guide innovative plans for Augusta

- **Employment**, with key long term issues being the number of people on the dole or doing casual work, affordable housing, and the number of absentee owners in the area. Suggested actions:
  - Keeping community facilities local and providing incentives to decentralise industries
  - Building the planned marina if it provides local employment
  - Altering voting rights of absentee landlords

- **Environment**, with key components being that people moved to the area because of the natural environment and were concerned about pressures from population growth, impact of visitors, and water quality and availability. Suggested actions:
  - Capping Augusta’s population
  - Managing biodiversity and the environment
  - Providing environmental education to visitors

**Community issues**

In one-on-one interviews, several issue categories emerged as having current importance. A breakdown of sub-points on each issue is provided in Appendix 5.

**Economic issues**

- Economic viability of town and making businesses more viable
- The need to create more jobs.
- Funding the required infrastructure.
- Affordability and availability of land and housing.

*Health and vitality of the Blackwood River.*

- “Our future is in the water”.
- Building a tourism industry, particularly eco-tourism.
- Trying to get the marina proposal happening

**Other hot issues**

- Fighting the Government’s proposal to develop Kings Park
- Attracting a better share of Shire resources

**Water quality**

- Concern about water quality, particularly from the Water Wheel.

Some of these are highly relevant to water and the Yarragadee proposal.

**3.2.3 Current tourism activity in the Lower Blackwood**
The town of Augusta is located at the mouth of the Blackwood River, where the river meets the ocean. The Scott National Park abuts the Hardy Inlet near Molloy Island. The Scott River, a tributary of the Blackwood River, passes through the national park.

Many of the tourist accommodation facilities in Augusta and vicinity identify views of the Blackwood in their promotional literature (e.g., Augusta Georgiana Molloy Motel, Augusta Baywatch Manor Resort, Ashani Guesthouse, Mayflower Bed & Breakfast). There are a number of popular tourism and recreation activities that occur on and around the Blackwood River and Hardy Inlet. These activities include water skiing, eco-cruises and fishing. A high percentage (93%) of respondents to a Human Services Survey conducted in Augusta in November 2003 said that their preferred recreation or leisure activity was available in Augusta (ACDA, 2004a).

The water skiing occurs in an approximately 1 square kilometre area near Molloy Island. Skiers are a mix of local residents (including the local ski club) and tourists. The two major boat launching areas are at Molloy Caravan Park and Molloy Island. Skiers are required to motor up the river to the ski area as the bank area beyond Molloy Caravan Park is privately owned.

The ski destination has become increasingly popular with non locals as the drying weather has meant less water in the Perth dams. It has become so popular that the Molloy Caravan Park, as of 14 July 2005, is fully booked for December. This means the park will be filled with about 500 people come December. Many of the bookings are for families from the Perth area who return annually. Due to its popularity, there is talk of increasing the size of the ski area. The popularity has also meant many of the skiers return in the winter months to use the area when it is less populated.

There are two boats based in the Augusta area that operate sight seeing tours on the Blackwood River. Both Augusta Eco Cruises and Miss Flinder’s Eco Tour promote themselves as eco-cruises and like to ‘show-off’ the natural environment on their tours. This includes flora and fauna of the river and surrounding areas, in particular the dolphins that live in the river and the bird life that nests near the river. The Miss Flinder’s Eco Tour runs September-May and typically attracts about 4,000 people during the tour season.

Fishing is a popular activity on the river and has been for many years. The Hardy Inlet and the Blackwood River have been commercially and recreationally fished for at least 100 years (DoF 2004). Today only one commercial operator remains, operating in the Hardy Inlet. Although no recent data has been collected on the recreational catch and effort in the Hardy Inlet and Blackwood River, the DoF believes it is likely recreational fishing effort in the Hardy Inlet/Blackwood River has increased. This is consistent with statewide increases in recreational fishing over the past 15 years as well as the State’s population growth (Department of Fisheries, 2004). The Department does not have any information on the levels of Aboriginal customary catch from the Hardy Inlet/Blackwood River.
Two fishing tour operators work in the Hardy Inlet/Blackwood River. They conduct mainly catch-and-release fishing trips for tourists (DoF 2004). One of the tour operators specializes in fly fishing on the river (i.e. Augusta Fly Fishing Adventures). Other recreational anglers fish from their own dinghies or hire a dinghy for the day to fish. There are a number of popular fish, including: blue manna crab, yellowfin whiting, King George whiting and black bream.

The Hardy Inlet and Blackwood River is also used by the local Augusta Yacht Club. Regular meets are held each Sunday (September – May). The yacht club organizes several events throughout the year to bring out of town yacht owners into the area.

There is also a commercial houseboat operator on the Blackwood River (i.e., Blackwood River Houseboats). The operator maintains two houseboats for use on the river, which are available year round. The boats operate in Hardy Inlet and up the Blackwood as far as Alexandra Bridge.

CALM manages a number of picnic and camping facilities on its lands along this section of the Blackwood. There is a picnic area (barbecues, tables and toilets) on the Blackwood at Twinems Bend in Scott National Park. It is accessible only by boat. The Alexandra Bridge camping and picnic area (near Brockman Highway and Warner Glen Road) is a large campground by the river and includes a boat ramp. The Chapman Pool campground is located on the banks of Chapman Brook just before it enters the Blackwood River. It also includes a boat ramp. Popular activities include canoeing, fishing, mountain bike riding, and swimming. The Augusta-Busselton Heritage Trail crosses the Blackwood River at Chapman Pool. Further to the north east there is a picnic area at Hut Pool (Great North Road off Brockman Hwy). (See map overleaf).

The CALM managed Scott National Park (3,273 ha) is located to the east and north of Molloy Island. Scott National Park is highly significant for its flora diversity. To preserve these values, public access to the Park is very limited. There are no 2WD roads within the park and no vehicle access to the park interior. There is boat access via the Blackwood River north from Molloy Island. Ranger permission is required to camp within the park. No general camping or open fires permitted. There is no fresh water available. Twinhams Bend is the only picnicking area. There is a 4WD access road (Scott River Road) that traverses the southern portion of the park. To the east of the Park, this road (name changes to Milyeannup Rd and then Woodarburup Rd) continues east following along the coastline to D’Entrecasteaux National Park. This provides one of two 4WD access points to Lake Jasper.

Forest Grove, a state forest area located east of Bussell Highway and south of Forest Grove) was identified as part of the Regional Forestry Agreement process as being suitable for redesignation as a national park. Currently there are no formal recreation sites in Forest Grove.
In 2003, the Gallop Government announced that boundaries had been established for the 1,400 hectare Forest Grove National Park. The proposed park would link with a further 1,570 hectares in the Chapman Brook area that was bought for inclusion in the national park network along the Blackwood Valley. The State Government was also creating additional national parks along the lower Blackwood River and some of its tributaries between the Bussell Highway and Nannup. "These Blackwood Valley parks will extend over more than 67,000 hectares of which 35,160 hectares are old-growth forest….These proposed parks will not only strengthen the conservation reserve network throughout the southern forests, new facilities will assist in attracting an increasing number of visitors which in turn will have flow-on effects for local tourist operators and forest communities." (Environment Minister Judy Edwards media statement 14/07/2003).


There are 105 CALM licensed commercial operators in the Capes parks (CALM, 2003) These are mainly focused on the Leeuwin Naturaliste National Park (outside the study area for this analysis) and on the Blackwood River. The current group is regular operators familiar with the operational requirements of operating on Departmental lands.

3.2.4 **Community views about potential impacts from the proposal**

Comments made during the one-on-one discussions were analysed into themes, and grouped into three main areas of social impact.

**Sense of place**

Health of the Blackwood
Saltwater is already encroaching up the Blackwood. If this proposal reduces freshwater further, what do we end up with? By the time we know, it may be too late.
This year the tides were stronger than the river current.
This is one of the world’s biodiversity hotspots which are under threat from human intervention.
The Blackwood is the one spot in Australia to be mentioned. It outranks all the other icons. Once we change aquifers we put that at risk and jeopardise biodiversity. If plants go, animals go. Once we play around with those conditions, we risk losing those forever.
The river is struggling to survive now.
We know that we have a resource that’s precious. The community knows that. You won’t get any support from the community if there’s any impact.
Hardy Inlet, just inside river mouth. Issues about the bar and access to the river. If Blackwood drops, access across the bar to ocean from river is limited. Impacts on tourism.
Real concern about a drop in water tables. If we take the water, there’s a risk.

Interdependence between environmental health and social and economic health:
Need a sustainable environment to allow the other two to function. Usually environmental health attracts people to areas. They then have a custodial role to maintain the environment. When human intervention destroys it, then the quality of life and well-being index drops dramatically.
People are less attracted to the area. They move out, and the economy is impacted.
Better tourism means more people would come to Augusta and spend money. This would make businesses more viable, leading to more jobs and employment. The money earned would flow back into the local economy as residents spend locally which would mean that services wouldn’t be under threat.

The key questions which emerged from these comments were: **Environmental values** -- will this change the Blackwood? Will there be diminution of flows and water quality? Community perception is that there’s a lot to lose as a community if the environmental effects are negative. **Amenity values** – what impact will this have on our attractiveness as a holiday/retirement destination, which is the basis for our continued growth?

**Futures foregone**

Contribution of water to Augusta’s economy
Would rather see the water used here, and sent to Perth as product – milk, etc (value-added) – rather than send the water to Perth. Better to produce food here and send it up than to have no jobs here because all the water’s gone.
Augusta survives on tourism. If the Blackwood was affected in terms of depth or salinity, it will be a real problem.
Lots of opportunities based around the river in winter, whale watching, cape to cape walks, the caves, the lighthouse, and unique old growth forest which goes right down to the riverbanks.
Tour boats during holidays.
Farmers want to retain control over their own livelihood
If there’s anything we develop down here, if it’s any good they bugger it up! Timber industry, tobacco industry, fruit industry. If you interfere with water, that’s another thing we can’t do. The frustration is because we can’t make decisions. Bureaucrats are getting in the way. It’s all about farmer viability and being able to make our own decisions. Lots of examples where a good idea is getting squashed. For example, the timber industry. If you let it carry on, there’s jobs for everyone. If you stop it, then jobs get lost, economy loses out, and eventually you need to import those products.
A secondary fear is that if the water needed to grow fruit isn’t available, it will have a potential economic impact.

Want to retain sufficient water for future use
Want to preserve the Yarragadee for the south west. Water will be a limiting factor for a number of communities.
Wouldn’t want our growth stymied because the water’s been committed to Perth.
Agricultural applications for water are queuing. The main concern is whether there will be sufficient water for future use.
We’re saying we don’t want you to take our water because it’s here. It’s ours. Having it gives us freedom to think about the future.

The key questions that emerged from these themes were: Health of the community is based on the health of the Blackwood. Will we be able to build an eco-tourism industry to bring us economic prosperity? Will this proposal restrict access to water for farmers in East Augusta and the Scott Coastal Plain? If so, what will their response be?

Benefit and equity in terms of access to water

Lack of trust
There’s a general sense of “They’re up to no good”. Community don’t see the proposal positively. Taking our resource – we’ll never get it back. The effects will creep up. We don’t get anything out of it.
There will be a consequence of some kind. What is the cost of this particular action? It’s not clear. Government has a bad record of doing things and then finding out later eg. cane toads.
Trust has been a big issue with this community and the Water Corporation. People believe that the Water Corp has an agenda and that the decision’s already been made.

Don’t want to send water where it will be wasted:
People in the metropolitan area – private, business and farmers, have to learn to stop wasting huge amounts of water before they take it from elsewhere. Many people aren’t aware how much they waste, and will continue doing it until they have to pay for it.
If I can see Perth people doing something, okay you can have our water. Otherwise no.
Even if the water stayed in the south west, it wouldn’t fundamentally change. It’s a mindset – if it’s there I can use it.
Perth people are inefficient with water and it is resented.

Equity
Bridgetown and Boyanup have water restrictions.
Reasonable regional needs – there’s a disparity between what’s seen as reasonable between a dry regional community and water guzzlers. As long as we go to town and see green lawns we’ll be concerned. If everyone has rainwater tanks and if everyone recycles and uses grey water, then there’s some equity. Rural communities are already doing all those things anyway. The Perth community isn’t. Communities want to see Perth people put in some effort. Pumping good water to Perth when we’ve got water problems is not equitable.

Parochial view
Augusta-Margaret River is a shockingly depressed area in socio-economic terms. Tension between holiday makers vs. the locals who struggle to survive. A social divide. And now they want our water and they don’t care. The metro is taking it away from the rural again.

Potential benefits?
Once you’ve got a pipeline in and have started taking water out, there’s always a possibility of being able to access it.
Short-term employment during construction phase.
Would like to think that the State Government would put something back into the communities. Just because the water’s under your town, doesn’t mean you deserve compensation, but would like to see some sort of return to communities.
No long-term benefit
Would like Water Corp to improve the quality of the water supply here. Put in a pipe from Fisher Road Spring to the southern end of town. Would make a difference. Must give people a benefit. Deep sewerage to be installed – a community project.

The key questions that emerged from these themes were: What benefit will our community receive from this proposal?

3.3 BUNBURY

3.3.1 Existing environment

The City of Bunbury is the largest centre in the South West region. The City of Bunbury proper has a population of 30,000, however the Greater Bunbury urban area encompassing the core residential areas of neighbouring shires, claims a population of 50,000, all of whom access Bunbury as their key service centre.

Growth in the area is strong with its current population of over 50,000 expected to rise to over 130,000 by 2030. The Greater Bunbury area (Australind, Eaton, Gelorup & Bunbury) is experiencing a growth rate of 3.4% per annum, which is expected to rise.

This strength is driven by a diverse economy. Significant employment sectors include retail, manufacturing, construction, health and community services, property and business. The wealth of the region is driven by the resource sector, traditionally mining, agriculture and forestry, and the port activity these sectors generate. Knowledge industries are on the rise in Bunbury and have the potential to be an important economic driver in the future.
The tourism industry in Bunbury is also growing as its recognition as a short break destination increases. In recent years, visitor numbers in Bunbury have risen by 11% per annum (City of Bunbury, 2005, p. 11).

The City of Bunbury sees its economy as being linked with the economics of its surroundings. The Draft City Vision Scoping and Positioning Paper (2005, p. 12) states: “In an increasingly global economy, it is imperative that regions remain competitive and continue attracting investment leading to economic growth and higher levels of employment. The region can compete far more aggressively with a combined regional marketing program. Although the agricultural industries are likely to remain an important part of the regional economy, the future development of the industrial areas of Kemerton and Preston and Port related industries at the Bunbury Port will increase economic diversification and increase employment.”

The City’s Budget 2004-2005 brochure states: “Over the last few years Bunbury has experienced many changes both in its physical composition and growth to the extent it has now been included as a Statistical District by the Australian Bureau of Statistics. This inclusion puts the City on the radar for potential investors and property developers as never before. The building industry alone invested $168 million in the 2003/04 year. Added to that the valuer general’s Office has updated the Gross Rental Values for properties in Bunbury and reported that over the past four years gross rental values have increased by 8.8% equating to $172 million.”

**Water sources**

City of Bunbury water comes from the Yarragadee and is supplied by AqWest under its licensed allocation. Outer communities are supplied by Water Corp from Yarragadee and Leederville. Availability and quality of water are not an issue in city water supplies, but availability is an issue at the Kemerton Industrial Estate, with lack of water an inhibiting factor to future expansion of the industrial estate. Kemerton needs a foundation customer to justify the expense of putting in water. The AqWest boundaries limit its supply to town areas.

While Bunbury can access sufficient water supplies through its bores, as Bunbury grows and draws more water, it may have potential draw downs due to current location of bores (Ventriss, pers. int. July 2005) To resolve this AqWest could reconstruct its well-field further inland so it gets deeper into the aquifer and spreads the drawdown load.

**3.3.2 Community aspirations and issues**

**City Visioning process**

The City of Bunbury commenced a 12-month City Vision process in late 2004. Its aim is to develop a strategy for the future where Bunbury remains sustainable and grows, and where growth and development occur in a structured and secure framework. The final
master plan will give city leaders strategic information for decision-making. The City of Bunbury has appointed an independent City Vision Taskforce to strategically guide the formulation of the Vision from concept to reality.

City Vision Strategy is a response to pressure for redevelopment and intervention in the City of Bunbury due to changing social, economic, and environmental dynamics such as:

- High population growth in Bunbury and the SW region;
- The need to leverage the regional development and employment opportunities from projected industrial development;
- Recognition of the costs of urban sprawl and benefits of land consolidation;
- Under-utilisation and underdeveloped icon and strategic sites;
- Non-viable commercial investment environment;
- Need for an overall Master Plan to guide development and planning strategies into the future; and
- Need to lever a long-term sustainable gain from the substantial resource sector developments (City of Bunbury, n.d.).

Vision for redevelopment:

- Increase residential population with a range of housing and employment opportunities, improved traffic arrangements, efficient public transport, and adequate social infrastructure;
- Create an attractive, functional, dynamic, and living environment that enhances the quality of life for the residents of the Greater Bunbury region;
- Refocus attention to make the CBD a destination rather than a ‘through road’;
- In all ‘best practice’ visioning exercises, it is critical that the Vision is clear, concise, realistic and achievable. The Vision must translate into a set of realistic actions and strategies (City of Bunbury, n.d.).

In speaking with City officers, while the project started as a revitalisation of the CBD, it has become a more substantial project looking at land use, economic development, social development and community development, focussed not just on the CBD but more broadly on how to manage Bunbury’s growth in an urban sense.

Community issues

In one-on-one interviews, several issue categories emerged as having current importance. A breakdown of sub-points on each issue is provided in Appendix 5.

Managing its growth

- Managing its transition
- Attracting needed investment, including from State Government
- Desire to be sustainable but flexible
- Rapid growth is putting serious pressure on resources.
- Need to capitalise on the growth – need to manage it.
- How to fund facilities for a population of the envisaged size.
• Managing its role as a commercial centre for the south west.  
  *Developing employment opportunities*
• Skills shortages for labour, particularly in construction jobs.  
  *Managing rapid population growth*
• Lack of housing  
  *Tourism related issues*
  • Tourism – dramatic shortage of accommodation.  
  • Proposed Nippon racetrack  
  • Revitalisation of CBD.  
  • Harbour development – environmental issues.  
  *Building on its strengths, including*
• Good resources and amenities for local people as a result of good planning  
• Diverse economy, solid industrial base, lots of diverse industries  
• The port and the waterways.  
• Location  
• Having the ingredients for growth that will attract people.  
  *Other issues*
• Non-availability of land  
• Water is important to development opportunities.

3.3.3  *Community views about potential impacts from the proposal*

Comments made during the one-on-one discussions were analysed into themes, and grouped into three main areas of social impact.

*Sense of place*

Environmental impacts
Concerned about drawing the water out – has seen salinity problems from being on the land at Collie.  
See what’s happened in Yanchep – the caves there are now dry because of the Gnangara Mound.  
Quality of waterways in Bunbury is critical.  
Not enough is known about the nature of deep aquifers. Lots of questions.  
Vast areas of State forest and remnant vegetation we’re wanting to protect. Minor changes in water balance could make big changes to those assets.  
Ten minutes out of Bunbury and you’re into those attractive areas. Amenity and relationship with environment happened here.  
Lake Preston – very ancient lakes. Stromatolites there may be affected by changes in salinity.  
Environmental risk is the biggest one. If Water Corp has no idea what the outcome will be, it’s a gamble and no gamble is acceptable. If it’s monitored by an ongoing watchdog then it’s not a gamble.

Environmental values in SW  
If you take the water out of here, Australia may become an orange country.  
If the environment is degraded at any level, it will lead to a decline in eco-tourism which will lead to an economic downturn, and a social response “they’re taking it away from us again”.
People do a cost/benefit analysis. Everyone could live in the city. Why don’t they? Because of lifestyle, livelihood and amenity (if the environment is stable). Change any of those and the cost/benefit analysis changes.

Take away the resource, and the activities you enjoy will dissipate – marroning, swimming, picnicking, camping – and it takes away the reason for living away from the metro area.

The amenity of the region is based on it staying as much intact as possible – not to be degraded. People come down and bask in it. If it’s denuded, who would come?

Don’t touch it – don’t want any negative impacts. This is a water-based community – quality of life, lifestyle and recreation based around water.

The key question which emerged from these comments were: **Environmental impacts** – what will the environmental impacts be?

**Futures foregone**

Want to have enough water to support expected growth

We want to build the population here. Water will help that. No water will hinder that.

Bunbury can’t do things on its own – relying on relationships with other government Departments to support it through provision of services and facilities. Given the growth, is water availability sustainable for the population envisaged?

Would like to see Yarragadee water used for building capacity of SW before it’s used to build the capacity of Perth.

Makes sense to use a resource that’s already here to encourage development to happen, rather than taking it away.

Horticulture and industry directly link in to Bunbury’s well-being. If you take the water, will we have enough for future development? Or will it be rationed because a greater number of people are accessing a finite resource?

Bunbury is a significant industrial sector – water is a requirement. Opportunity for economic growth through industry. Provision of water keeps it going into the future.

The proposed pulp mill would need a lot of water.

If it runs out, we don’t have any other options, therefore keep the options open for the SW. We won’t be able to get it back again.

Strong feeling among people in SW. Genuine sense of ownership – it’s a resource for the SW to use. Sick of anything decent being sent to Perth. Shortchanged. The resource will allow us to develop. If whole capacity was to go into the IWSS, we’d struggle with that.

We want a guarantee of water.

Needed for housing development and growth, agricultural intensification, industry. Water would make a difference to attracting industry to the area.

**Bunbury First**

Government needs to understand that SW as a place to live takes the pressure off Perth. This will never be achieved if fundamental issues like water are an issue. If fundamental issues like water can be addressed, including access to better quality water for the SW, not just for pockets, then it’s a benefit. Gives the State another growth area that can be maximised.

Bunbury has a current population of 30,000; Greater Bunbury (Australind, Eaton, Gelerup & Bunbury) 55,000 and growing. Projections of a population of 130,000 in Greater Bunbury in 2030. Development arc envisaged between Bunbury and Busselton over the next 30 years. Bunbury is rapidly spreading south and Busselton is spreading north, meeting at the Ludlow National Park. This would become a significant urban community with an envisaged population
of 300,000 by 2030, similar in size to the Sunshine Coast in Queensland. The Government hasn’t acknowledged this yet. Focus is on “how will we support Perth?”

Bunbury is not the second city to Perth. We are the alternate State city – an international city.

Mining and resource sector – very water dependent.

The bulk of agricultural areas around Bunbury aren’t developed intensively – perhaps only 5-10%. Vital to have access to water to transform agriculture from dairy to horticulture to more intensive forms of land use. Agriculture can create a lot more real dollars. There’s a huge unmet food demand here and in Asia.

A shaky community bases itself on one area – diversity is strength for long-term sustainability.

Well-being = diversity. If lose diversity, lose well-being.

Yarragadee proposal undermines the investment the Government should be putting in to support the growth here.

Health of region contributes to health of Bunbury

Bunbury’s economy and social well-being depends on health of the region as a whole. Concerned about water availability in smaller communities where there are restrictions.

Symbiotic relationship with region. Regional services are based in Bunbury. If people from the region don’t come in, spending money, it affects us.

The attractiveness of those areas to live in is important to Bunbury – those communities use services here.

Bunbury has four spines: Collie (resource sector and mineral sands), Harvey/Dardanup (irrigated agriculture), Warren Blackwood (timber and horticulture), and Vasse Leeuwin (horticulture and tourism). Warren Blackwood used to be the strongest arm, “historically propped the region up”, and Vasse Leeuwin the weakest. Bunbury needs all 4 spines humming along.

Now Warren Blackwood is declining, not adding any investment to Bunbury. Lots of opportunities for diversification but opportunities are hamstrung because of water availability. Eg. an industrial estate between Manjimup and Bridgetown can’t develop further until water is available. Could get more residential but can’t because of water.

Warren Blackwood is still the best farming area, best climate for agriculture.

Vasse needs strong industry and needs water. If Busselton’s growth was hampered, it could potentially create a second weak spine.

Issue of water availability has to be resolved. Need to sustain those communities.

On our own (as individual towns) we haven’t got the sustainability. As a SW province we’re a self-contained entity with ongoing viability. This proposal threatens that potential future – “stealing their future”.

The key questions which emerged from these comments were: Futures foregone – will we have enough water for growth – residential, industrial and agricultural -- in the future? Will we still be able to do what we want to do? Will this proposal restrict Bunbury’s future as a sustainable regional centre? Will it restrict the vision of a strong sustainable south west province? Supporting Perth diverts a resource that should be put in to supporting Bunbury and the SW. Regional viability – will smaller towns be impacted to the extent that their impact has a flow-on effect to Bunbury?

Benefit and equity in terms of access to water

Perceived threats to current bore use and current allocations

People whose bore and dam use is related to livelihood are worried about proposal. All bore users are suspicious that their own water use would be curtailed; that they won’t be able to draw as much bore water.
Prime agricultural area at Lake Preston is irrigated from underground – horticulture and vegetables.

Hackles go up when you talk about water allocations. Farmers rely on the water. If changes to allocations of availability, they only see a negative – greater cost/harder to get results. Their economic prosperity is threatened, leading to the lessening of capacity to make decisions.

Generally don’t get charged for bore water now. It’s low cost or free. Therefore people are concerned. Will increase the expense of maintaining a lifestyle.

Believe there has to be some identification and regulation of bore users. Every other State has done that as part of the National Water initiative. Has given water a trading value.

People value water and its ready access. Mistrust that the government could mismanage something that could have negative impacts on the region. Don’t want water shortages to happen here.

If there’s a short summer, the imperatives will be to get more quickly. If infrastructure is in place, could take more and no-one would know.

Once the pipeline’s in, anything could happen. Won’t stop at 45GL.

Satisfy our needs first

Before you solve the Perth problem, set aside an allocation for the region and put in a pipe to get water to Manjimup, Pemberton and Bridgetown. Once Perth’s needs are met, water availability won’t be an issue and those towns will still have problems.

Let’s see if there’s water there. If enough, what’s our need? Establish allocation and infrastructure. If there’s a surplus beyond that, the greater metro can have it.

Manjimup doesn’t have water. There’s no equity to overlook those places. Not fair.

There is no equity between water supply and quality in the city, and what most country towns have. While they have an inconsistent water supply, seeing it go to Perth where there isn’t an inconsistent supply leads people to say they don’t want the water to go to Perth.

All funds go to the city and little comes back.

If taking water leads to further restrictions on allocations, adds to the resentment.

Perth people want the trees to stay in Manjimup so they can go and look at them. But Manjimup people can’t control the trees of people in Perth – therefore a lack of equity.

Water sensitivities already exist

Already a water shortage at the Kemerton Industrial Estate. This is restricting take-up because industries need water supply.

People are sensitive about water issues eg. irrigation areas that are close to tuart reserves.

Why support Perth?

Why should we be supporting Perth? Leave it alone – it’s our water.

Perth is unsustainable – why raid other areas? We in SW are sustainable. Why deplete a sustainable area to bolster an unsustainable area?

Difficult for Government to spend money on infrastructure in SW eg. schools are closing. It’s more efficient to put people into the city rather than put effort into the SW. Emotion has built up over years.

We own it – you should pay

No talk of a levy. If they put a cent a litre – that could generate something that could be dispersed.

Have seen it before – revenue streams from SW to Perth and doesn’t come back. Eg. royalties

Peripheral issue for Bunbury

People not aware of the size of the proposal, nor its impacts. General lack of understanding.
Not a problem that’s high on the radar.
Other areas have greater issues that we do.
More an issue further south where there’s water on the ground.
None of the lifestyle aspects in Bunbury are linked to the Yarragadee. There is no visual impact from the Yarragadee. If we ran out of water and people couldn’t do the things they liked, it wouldn’t be related to the Yarragadee proposal.

Potential benefits for Bunbury?
Don’t have a water shortage so it’s not solving a problem for us.
There are pockets in Bunbury who have direct access to the Yarragadee. Additional benefit could be an expansion of source locally, in terms of quality and consistency of supply.
This has been sold as a project for Perth. How it’s seen needs to change. Is there the opportunity for regional development to come out of this as well? Threat to future hasn’t been put out there – a vehicle for economic development – if guarantee there’s a resource that can help drive Bunbury’s future, there’s a benefit.
Industry can tap into water directly now. If they have to go through Water Corp, their cost would increase.

Regional benefits
In communities where there are water issues, people are not averse to trade-offs. Provide something to those communities.
It’s a resource to be shared, not just for those who live above it. Concern is that the emphasis is on what Perth needs, not what the SW needs.
If there’s a mistake, the SW is forever disadvantaged.
Is there any way of flowing benefits back to the country to correct the imbalance?
Nothing in it for communities at the environmental level.
Lots of opportunities along the pipeline – Capel, Bunbury, Dardanup, Harvey, Brunswick, Burekup.
Could provide a catalyst for Kemerton.
Should help State to use all its assets – quality of life comes from amenity and all assets used in balance.
For some people, the environment they’ve chosen to live in might change. If there are no benefits, why support it? Therefore, people will be looking for the sorts of things that will benefit their communities in the process eg. opportunities for other businesses to grow, pipeline to Kemerton; water mapping availability of the resource.
The IWSS can send water both ways. Options will become more available in times of need.
Business could spring off a pipeline. Changes the social dynamics of where people could live and what they could do.
Yarragadee would provide infrastructure to the south west for growth and decentralisation.

The key question which emerged from these comments were: How will we benefit from this proposal?

3.4 BUSSELTON

3.4.1 Existing environment

Busselton is located approximately 228km south of Perth, and is the major town within the Shire of Busselton. The Shire itself covers an area of 1454 square kilometres, and can
be described as a typical Australian coastal community affected by the “sea change” phenomenon. Sea change communities typically have high value natural environments and, having become popular havens from metropolitan areas, are experiencing rapid growth and social change (The Embers Trust, 2005, p. 5).

Rural areas comprise approximately 1300 square kilometres and include land developed for pasture, agriculture and viticulture. The two agricultural zonings of viticulture/tourism and agriculture total 53.5% of the total land area, with significant areas of State Forest and national Park. Local industry includes tourism, manufacturing, dairying, beef production, vegetable production and viticulture.

Milk production has the highest gross value of agricultural production (GVAP) of all commodities in the Shire accounting for an estimated 33% of all farm output in 1999/2000, while cattle sales accounted for 15%, vegetables 9%, hay 11% and grapes 19%. The total crops value is estimated at almost 50% of GVAP. The Shire’s GVAP has increased from $23 million in 1982/83 to $62 million in 1999/2000. The value of all agricultural commodities in 2000/01 was $77.8 million which was 3% of the State’s total (Shire of Busselton, 2004, p. 2). Much of this rise in the contribution of agriculture can be attributed to the growth of the wine industry.

The Shire is also one of the State’s most popular tourist and holiday destinations. In 2001/02 the ABS estimated that tourism takings totalled over $20.5 million, 5.4% of the State’ (Shire of Busselton, 2004, p. 2).

In 2001, Busselton had a population of 22,060 people, an increase of 28.5% during the inter-censal period. The town of Busselton is one of the fastest growing country towns that are not regional centres, and the Shire is the sixth fastest growing rural Shire in Australia (Shire of Busselton, 2004). Being adjacent to the Shire of Augusta-Margaret River, it services people from the Augusta-Margaret River Shire for services not found within their own Shire. Population swells to approximately 60,000 during the peak holiday times. Of the total Shire population, approximately 66% is located in the town of Busselton.

The Shire’s population structure reflects a broadening of the area’s economy and increasing employment opportunities with a corresponding reduction in the significance of the area’s ‘retirement’ function. The percentage of residents aged 55 and over decreased from 25.1% in 1996 to 23% in 2001. Over the same period there has been a 32.2% increase in the under-19 age group; and a 31.9% increase in the 20 – 54 age group. The median age is 35 years.

Wholesale and retail trade has taken over from agriculture as the dominant area of employment; and manufacturing, recreation, personal and other services have steadily increased along with the tourist industry (Shire of Busselton, 2004).
Water sources

Busselton’s water is drawn from the Yarragadee and supplied by the Busselton Water Board under its licensed allocation. It is allocated for 18 GL/yr, and currently uses 3.6 GL/yr. Availability and quality are not an issue. Busselton has a good water source now with water in abundance and doesn’t want that to change.

3.4.2 Community aspirations and issues

Shire Visioning process

The Embers Trust, a management committee of Council with community representation, is undertaking a visioning process. The Trends Document, released in March 2005, resulted from a community workshop, plus incorporation of planning data and interviews with local organisations and individuals. The document covers: where we are now; forces of change; trends; and what would we look like if we do nothing. It will focus on six key areas:

- Urban design and planning
- Health and well-being
- Natural resources and environment
- Arts and culture
- Economy, industry and technology
- Education

It is a big project and very important to Busselton because of current growth pressures. There is a need to identify what’s important and manage the growth. There is currently no community vision to oversee the growth.

The appreciation of the environment is strong in Busselton because of its coastal location. In the area of natural resources and environment, the Shire identifies its position through these factors which indicate the challenges of balancing growth with maintaining environmental features:

- Geographe Bay and the Leeuwin-Naturalists Ridge both provide high quality scenic views that attract strong demand for residential land;
- The natural environment is recognised as a global bio-diversity “hotspot”
- There is a situation of high population growth and a strong tourism industry
- The economy’s major industry sector is agriculture

The Embers Trend Document (2005) reflects concern about the Yarragadee proposal: “This would have an adverse impact on the ecology of wetlands and waterways that traverse the ground water systems and a reduction in groundwater levels could cause significant damage to vegetation and fauna population sin the area” (p. 20).

The document describes the wetlands as having international significance for waterbirds. The Vasse-Wonerup Estuaries are listed under the international RAMSAR Convention. The community would like to develop the wetlands as an educational and study resource,
and planning is underway to develop an ‘eco-tourism experience’ at the western end of the wetlands. For the Indigenous people of the area, the wetlands were a food and water resource, a camping place, and a site of special spiritual significance (The Embers Trust, 2005, p. 20).

Community issues

In one-on-one interviews, several issue categories emerged as having current importance. A breakdown of sub-points on each issue is provided in Appendix 5.

Managing rapid growth
- Busselton is a seachange town
- Growth is continuing
- The need to manage the growth
- In transition.

Ensuring sustainability of development
- Sustainability of the rate of development.
- Creating a more stable economic base to better support growth.
- Socio-economic base is not balanced
- Lack of infrastructure.
- Creating jobs

Creating infrastructure to support population growth
- Need infrastructure.
- Service delivery and level of services

Housing
- Price of land and housing continue to escalate.
- Affordability and availability of housing.

Environmental issues.
- New environmental strategy by Council.
- Environmental priorities as seen by environmental groups in Busselton

3.3.3 Community views about potential impacts from the proposal

Comments made during the one-on-one discussions were analysed into themes, and grouped into three main areas of social impact.

Sense of place

The environment attracts people to Busselton
Have to be careful we don’t kill the “golden goose”. The environment attracts people to the area. The environment is not separate. It’s why people want to live here. It’s why things are the way they are. If we started impacting on that, it’s a problem.
In a Shire survey 5 years ago, the environment was the top factor for 80% of people about why they came to Busselton. Environment rates very highly.
The environment is bringing people here – for retirement and holidays. Also attracting people with investment. The environment is regarded very highly – good recreation areas and very
family friendly. The Blackwood is important. Perth people use this area and get the benefits from it. They would be damned to ruin it.
Environment and water have intrinsic value – part of sense of place.
SW is one of the Top 25 Biodiversity Hotspots in the world – you see things here that you don’t see anywhere else.

Concern about environmental impacts
A fall in water table could stop all of our industry. Could stop everything. The whole economy could fall over – that’s the risk.
Salinity and water levels in the Blackwood are a concern. There is a recharge point near Nannup that is fighting the salinity, improving the quality of the water.
There are interfaces between the Leederville and the Yarragadee. If you suck the bottom out, that will have an effect on the top layers. Concerned about food sources drying up.
No faith in the projections and modelling. Sceptical. Recharge is not known. Bores can’t be sufficient to know it completely.
Concerned about Blackwood going dry in the summer and salinity rising.
Already seeing surface salt at Molloy Island.
Concerned about the impact on forests. The Yarragadee is what supports the forests. The drought years have affected the forests.
Potential risks:
- Potential environmental degradation
- Maintains societal complacency that there’s plenty of water. Need to re-evaluate our use of water.
- Possible species extinguished, including Threatened Ecological Species.
- Possible eco-system collapse.

Need to know what we’re doing by mining the water. Busselton has a dependency on groundwater. Concerns are:
- Approaching salt plumes in the bay. If flow-out diminishes, possibility of salt inflow.
- In cities which have over-pumped groundwater there is a sinking problem. Will that happen here?
Climate change has led to a huge reduction in rainfall, which has led to water restrictions. There’s going to be less. Recharging of the Yarragadee won’t continue at same rate because of the climate change.

The key questions which emerged from these comments were: 

Amenity values – what impact will this have on our attractiveness as a seachange destination, which is the basis for our continued growth? 

Environmental impacts – what will the environmental impacts be?

Futures foregone

Want to have enough water to support expected growth
“Can help out your friends and go broke yourself”.
This is the fastest-growing part of the SW. Will have increasing demand for water.
If we let Perth take the water, what happens long-term when we need it? Why can’t it be left for us to use?
Want to be sure that water resources remain intact to service the massive growth envisaged.
If we’re ever going to attract industry here we need water. If new industry wanted water and we couldn’t supply it, there’d be a problem.
There are no surface water sources here. There will be need for a good water source into the future – the risk is not having enough water to support the growth. And if there was any change to water quality people would be concerned. Yarragadee may or may not have an impact on abstraction in this area.

Agriculture needs water eg. Sabina River and Jindong. There is potential for horticultural development in the alluvial soils at base of the Whicher Scarp which would need water. Once you intensify (eg. Grapes, avocados, vegetables), all need large quantities of water. The Ag Dept has done land surveys and knows which areas have the potential to intensify.

The key questions which emerged from these comments were: *Futures foregone* – will we have enough water for growth in the future? *Agricultural viability* – will our agricultural base be impacted to the point where its viability will be threatened? If so, what would that mean to our community viability?

**Benefit and equity in terms of access to water**

It’s our water
It’s our only water supply – don’t interfere with it.
“Hands off” until we know more. We need to protect our access.
If you’re drawing in the local area and using it locally and it was making an impact, the local community would solve it. There’s a greater incentive to get it sorted. It’s different if the water’s being used somewhere else. There’s no incentive to fix it. They wouldn’t care.
People in the city and country look at water differently. In Perth it’s a given. Here it keeps things alive. It’s your living. Water is essential, and it makes a difference if you don’t have it.
Won’t stop at 45GL. Once started, we’re locked into it. It’s a risky way to go.
May increase over time, and in 10 years will we need to find another water source?
Need to have an understanding of what the effects would be. Totally opposed to it going to Perth because there’s a lack of efficient water use in Perth, and people need to adapt to reduced rainfall – not expect to get what they’ve always got.
If the water didn’t go to Perth, but was retained for use in SW, we wouldn’t need 45GL immediately and could instead take it incrementally as needed. Could then monitor the draw and have a good understanding of what the effects would be.

Farmers worried about potential changes to water availability and resultant increased operating costs
Great concern of farmers – that water licence applications are waiting until this project is completed.
Viticulture land is in Jindong water management area, irrigated from the Leederville. Concern relates to infrastructure costs. They are losing positive pressure which means they now have to put down submersible pumps. Changes in water pressure lead to increased costs as a result.
If taking Yarragadee water affects the shallower water that much of Busselton relies on, there will be an impact on bores and financial costs.
Don’t have any confidence in the decision in terms of potential environmental impact and long-term water availability. Will our resource be protected? Have the needs of this area as a fast-growing area been taken into account?

**Equity**
There’s more votes in Perth – if they want it, they’ll get it.
Lack of confidence that Busselton views will be taken into account – marginal
This is another example of our needs not being looked after. Dollars come out but never get put back in.

Potential benefits?
What benefit could we get? If sustainable, what’s in it for us? If long-term availability is under question, leave the water alone – we don’t need the short-term economic benefit. You’ll have to convince me that the resource is for ever.
Benefit? Yes, if they give us water. Busselton Water Board has a license to abstract water. If it gets water from the Water Corporation there might be a benefit.
The only benefit is knowledge.
Could be part of the IWSS but have our own Water Board for water provision.
Towns with severe water restrictions are asking – why can’t it be piped to us?
Spike in capital expenditure during construction – boring and pipeline contractors.
No employment.
No talk about purchasing a service corridor.
Resources are State resources and belong to the State.
Yarragadee proposal would have to have benefits in terms of providing water along its pipeline route, eg. through Kemerton Industrial Estate.

The key question which emerged from these comments were: Needed infrastructure – will this put our over-stretched infrastructure under even more pressure? If water isn’t an issue, then we can focus on other things.

3.5 MARGARET RIVER

3.5.1 Existing environment

Margaret River is one of two major towns in the Shire of Augusta-Margaret River, the other being Augusta. Other townships including Cowaramup, Karridale, Witchcliffe, Prevelly and Gracetown. Approximately one-third of the Shire land is freehold, with state forest or national park comprising about 998km. National parks include the Scott River National Park, Leeuwin Naturaliste National Park, and Margaret River National Park, which was gazetted in 2002.

Agriculture in the Shire includes the major industries of viticulture and wine production, dairy and beef cattle, sheep, fishing, and horticulture. Tourism is another industry with the area popular for its rugged coast for surfing, galleries, vineyards, rivers and forests.

The township of Margaret River is situated next to the Margaret River and was originally developed for farming and dairying. The wine industry has grown into Western Australia’s main wine region since the first grapevines were planted in 1967. Margaret River is a popular tourist destination for its fine wines and wineries, cave formations, forests, national parks, restaurants, art galleries, coastal scenery, and world class surf beaches (CSIRO, 2004b).

The Leeuwin-Naturaliste Ridge Statement of Planning Policy (LNRSPP) (1997) provides clear direction on future land use for the area including the narrow coastal strip stretching
from the near-shore waters of Cape Naturaliste to Cape Leeuwin and inland to Bussell Highway and the eastern extent of town sites along the highway. The Augusta-Margaret River Shire has been gradually implementing town site strategies within the framework of this planning policy document.

The population of Margaret River is approximately 6,300, with 60% in the town and 40% in the rural areas (CSIRO, 2004b). Margaret River recorded greater than the Shire population growth with an average annual growth rate of 6.9% between 1991 and 2001. Between 2001 and 2016, the Shire is projected to continue to grow, but at a slower rate (average annual rate of 3%) (ABS, 2001).

The median age in Margaret River is approximately 35 years (ABS, 2001). Age structure follows a distinctive pattern throughout the south west, where population declines between the age groups of 15-19 and 20-24, but in Margaret River this dip is not as severe as in Augusta for example. The largest group is 40-44 year olds, with a marked decline in numbers from age 55 upwards. Just over 7% of the population is aged 65 and over. A greater percentage of the Margaret River population aged under 44 live in the urban area, with a higher percentage of people aged 50-79 years living in rural areas (ABS, 2001).

In Margaret River, the industries of Agriculture, Forestry and Fishing (approx 11%); Manufacturing (approx 13%); the Retail Trade (approx 15%); and Accommodation, Cafes and Restaurants (approx 12%) dominate the employment sector (ABS 2001). Many people work in the service industry related to tourism and viticulture.

The Town Planning Scheme shows where the future population will be. Current proposals include increased population capacity in Margaret River to 12,000 (potentially 20,000), Witchcliffe to 1000, and Cowaramup to 3,000. The aim is to spread development across shire so it is not all focussed on Margaret River, through hamlet or node development. The Shire wants to avoid strip development and preserve a distinct agricultural break between towns. The Shire is keen to preserve the agricultural component. The Shire needs to look at economic and properly managed sustainable growth (McCall, J. pers. int. May 2005)

Water sources and water issues

The town’s water supply is provided from the Ten Mile Brook Dam (cap 1,690 ML). Ten Mile Brook is a tributary of Margaret River and the town’s water supply scheme includes a ‘pump-back’ component. Water is captured from Ten Mile Brook and augmented with water pumped up from the Margaret River. The dam supplies water to the Margaret River township, Prevelly, Gnarabup and Cowaramup. There may be water quality issues associated with continuing to use water from the Margaret River as there is agricultural activity within the catchment.
Witchcliffe and Gracetown are not connected to a reticulated water supply scheme. The availability of domestic potable water is a constraint on local development, especially in Witchcliffe. The availability of local water for agricultural use is already a limitation.

The Shire has recently undertaken a three-year water quality monitoring program (2001 – 2003) covering 23 sites in the Shire (Delaney, 2005b). The project was done jointly by the Shire and the Lower Blackwood Landcare Group with technical support from the Department of Environment. The results of the study have highlighted a range of water quality issues in the region including the prediction that current dry conditions experienced in the South West is likely to continue. This will increase the demand for water resources and identifies the need for proactive planning for water conservation and water use efficiency (Executive Summary). As a direct result of the study, the Shire has entered into a Water Use and Efficiency Campaign with two other Shires – Capel and Busselton – which is about to start (Delaney, M. pers. int. May 2005).

If the Shire continues to promote viticulture and agriculture, water will be a critical resource to this future, and it will be critical to monitor its use and quality. Viticulture needs both good quality soil and water. Properties with water resources are sought after. The 2004 International Wine Tourism Conference program carries a foreword by the Shire of Augusta-Margaret River which states:

“As development has progressed in the area, conflicts have arisen between agriculture and tourism. Water and land resources have also come under pressure from the diversity of uses being proposed. How these challenges are met today will define the character of the area into the future. Council believes that future relies on maintaining a balance between agriculture (including viticulture), tourism and the natural environment. To achieve this, policies have been put in place that confirm agriculture as the primary use in the rural areas and the only acceptable use for finite water resources. Confining the use of water to agriculture means that further sustainable agricultural development can take place well into the future” (p. 4).

WRC has proclaimed dam use in the Shires of Capel, Busselton, Nannup and Augusta-Margaret River, in an effort to define and control the use of dams. A dual system will be adopted where the Shire also gets involved in licensing dams and licensing people to draw water from streams.

Vines in areas within the Margaret River appellation area have greater value than vines outside of area. Margaret River produces 3% of total crush in Australia, and has a 20% share of premium wine market. Biggest winegrowing region in WA but quite small compared to other regions in Australia.
3.5.2 Community aspirations and issues

Shire/CSIRO Sustainable Communities Project – Initial workshops June 2004

At a Shire level, the Augusta-Margaret River Shire is progressing with a joint Shire/CSIRO Sustainable Communities Project, to develop a community vision of sustainability that takes into account local economic, social and environmental values, and builds on previous and existing plans and visions for the region. This project will help the Shire to plan and manage growth. In June 2004, ten community workshops were run in the region, three of which looked at the characteristics and needs of particular localities, while the remaining seven addressed specific topics such as agricultural intensification, community values, land use change and employment issues (CSIRO, 2004a, p. 4).

The Margaret River workshop identified three broad categories of drivers of change and key actions within each:

- **Natural environment and services (including water), with key concerns being loss of habitat and biodiversity, pollution and noxious weeds, and water availability with increased demand. Suggested actions:**
  - Education about water use to encourage smart water technologies
  - More environmentally-friendly housing designs
  - Contribution to the reduction of carbon emissions

- **Shared vision, with a focus on how it could be developed, and how a shared vision could be kept dynamic. Suggested actions:**
  - Developing ways to measure the progress of a shared vision
  - Establishing a think-tank linked to the local university campus to develop and monitor a vision to ensure everyone has input

- **Population, with key concerns that the population increase will put pressure on land and services, increase traffic, reduce agricultural land, increase land prices, and decrease sense of community through diffused community values. Suggested actions:**
  - Plan for green belts
  - Build a perimeter road to better manage through-traffic
  - Strategies be developed to support community activities.

The project will be completed by the end of 2005. The initial modelling has been completed, with a focus on water and agriculture (Shire of Augusta-Margaret River, 2004a).

“The focus on water and agriculture allows us to bring in quantifiable data into the model based on science that can lead us to very real scenarios or possibilities. Over the next 30 years it is predicted by CSIRO research that there will be a 20% reduction in rainfall due to climate change. We can use climate change as a lever, and ask the model what if climate reduces rainfall.”
“The planners took into consideration that the model may be more useable if we focus on the main issues/threats facing the Shire. Discussion was held on what the main issues/threats to the region are. The need to focus on the environment emerged as ultimately the economy and social factors are wholly dependent on this. If we don’t have clean water, we have social (health) and economic issues.” (Shire of Augusta-Margaret River, 2004a).

**Community issues**

In one-on-one interviews, several issue categories emerged as having current importance. A breakdown of sub-points on each issue is provided in Appendix 5.

*Planning and development issues:*
- Managing its transition.
- Rate hikes
- Changes to the Town Planning Scheme
- Has grown very fast.
- Proposed new perimeter road.
- Tensions between development and keeping it how it is.
- Absentee landlord issues.
- Time taken for development approvals.
- It’s a community where people are very conscious of what’s going on and want to have a say.
- Limits on urban development.
- Huge housing boom happening.
- Developers are looking to develop land Cape to Cape.

*Development of the economy*
- Seeking a diverse economy.
- Lots of skilled professionals here.
- Intensive agriculture is a source of future employment.

*Social issues:*
- Affordable housing
- Unemployment
- Single parent families
- Influx of people
- Keeping young people here.
- People come here for lifestyle, but not many jobs.
- Seen as a wealthy area but it isn’t
- Disparate and divided community.

*Environmental issues:*
- Depletion of water table
- Pollutants going into the water
- Old growth forests
- Dams
- Development along coastline
- Capping the population
- Issue looming over sand mining at Lake Jasper.

**Water issues:**
- Dams being built for aesthetics, and subsequent moves to control and license dams
- Impact of climate change in the area
- Water efficiency in the Shire
- Potential intensification of agricultural land use and water
- Water demand if rural subdivisions are allowed
- Water for wineries.

### 3.5.3 Current tourism activity in Margaret River

The Margaret River promotes itself as a premier tour destination, based on ecologically sustainable tourism: “an enticing mosaic of pristine natural wonders, premium wineries, fine restaurants, world-class arts & crafts, dazzling beaches, and spectacular forests” ([http://www.margaretriver.com](http://www.margaretriver.com)). Recreational activities include windsurfing, whale watching, sailing, caving, scuba diving, fishing, bushwalking, golfing, and gourmet pursuits.

The Augusta-Margaret River region receives approximately 551,500 visitors annually (2002-03 figures), 75% of whom visit for holidays and leisure. Fifty-eight percent engage in outdoor/nature based activities including going to the beach, visiting national and State parks, bushwalking, rainforest walks, visiting botanic and public gardens, going whale and dolphin watching, and visiting farms (Tourism Western Australia, 2004).

Social tourism attracts 86% of tourists (Tourism Western Australia, 2004), and viticulture-based tourism is expected to continue to drive strong economic growth in Margaret River (CSIRO, 2004b, p. 6).

### 3.5.4 Community views about potential impacts from the proposal

Comments made during the one-on-one discussions were analysed into themes, and grouped into three main areas of social impact.

**Sense of place**

Potential social impacts – the value of the environment
Agriculture and tourism are interdependent – both natural attractions and rural amenity. Rural amenity relies on people making money from agriculture. With land prices here, won’t make money unless use intensive agriculture.
If people can’t pursue agriculture, rural amenity would be damaged, and this would contravene State Govt’s own policy to support agriculture.
Rural land could be fragmented as a consequence of lack of water. People come here for rural amenity (to look at it and visit it). Anything that damages the natural environment or rural amenity will impact tourism.
Rural amenity is enhanced by adding diversity. Diversity equals strength and contributes to tourism.
We have a water resource here. 45GL will take everything – will remove opportunity, and will eventually impact on preservation of rural land for agricultural purposes.
People value the environment – the environment has brought the wealth. Any threat to that and people would see it as bad.
The economy is linked to the environment. Amenity is linked to social and economic well-being. Social well-being is important to having a good community.
Tourism is like a ‘house of cards’. Great while people are saying Margaret River is great but doesn’t take much to shift it. Over-development is greatest danger there as well as affecting the environment. Over-abstraction of the Yarragadee will do that. Lots of businesses ride on the back of tourism – could easily fall over.
Attraction of the area (huge tourism) and environmental enjoyment is based on balance. If environment dries, takes away the enjoyment, and economic viability of the region.
Reduction in environmental amenity would reduce tourism, which would reduce employment, which would reduce the need for development. Would reduce the potential and general viability of the area. “Unknown restriction of infinite potential.”
People live here because of the environment. It’s an exciting place. Everything is affected by the environment. No-one wants anything to change. No one would want another Beenup.
A part from 100-200 blocks at Gracetown, the rest of the Leeuwin-Naturalists Ridge is in the condition it will be in forever. Forests will stay the same. It’s a question of “will we allow people to acquire land and houses here?”
SW competes with other regions. Change in environment would change the attractiveness of the area.
“Growth will keep going until it becomes an unattractive place to visit, then growth will taper off. Will reach a point where visitors’ expectations of environmental amenity are not matched by what’s there.”
Need to balance agriculture and tourism – tourism will keep developing anyway, but need to support agriculture.
Taking water would put a limit in place – would limit long-term development in the area.

Environmental effects
It’s ours to look after – we’ll suffer if there are any environmental effects.
Yarragadee is there for a reason. Would like to see it used as a last resort.
If they don’t get the flow through Lake Jasper, there’s a risk of acid sulphate soils.
If they do it and they’ve got it wrong, they’re committed and they’re not going to stop. Will lead to environmental damage.
Could stop the flow into the Blackwood. Helps to flush out the salinity.
Ecology of Blackwood is based on relatively fresh water – concern if that changes.
Rivers are under threat. Blackwood is like an artery in this area. It’s an appalling statement to say the Blackwood is already saline so it doesn’t matter. Need to try and rehabilitate it.
Reject the idea that some environmental impact caused by this would be okay.
Potential problem at Beenup. Beenup rehabilitation depends on water levels in the ground. If water level drops half a metre it could affect the acid sulphate rehabilitation work.
Bringing the borefield further north could have an impact on Margaret River. Does the Yarragadee feed into Margaret River? Margaret River needs its fresh water. It’s much smaller than the Blackwood. Hydrogeology would need to be well investigated.
If no environmental impact and enough for everyone, then okay. If not, why take the resource out of here?
Environmental degradation manifests itself around water.
The Blackwood Basin group, a Landcare group based in Donnybrook, received $$ from CSIRO – one of three areas across Australia to get funding. Federal money has poured into protecting the
Blackwood. If a lot of water gets taken out it will have a serious impact on the Blackwood which will impact the work being done by the LCDCs.

Water Corp don’t know enough about the Yarragadee
Extremely sceptical that they’ll do enough work to understand the reservoir. The small amount of work they’re doing is not enough.
Whole process is too rushed. Need to do long-term production tests and interference tests. If you take from one area, what are the impacts elsewhere?
Study hasn’t fully addressed Margaret River.

Community don’t understand the Yarragadee
People don’t understand how water is used, and which are the highest users of water.
Don’t understand that groundwater is not the same system as surface water. Different mode of recharge. People don’t understand how groundwater is replenished.
Need to get the information out.

The key questions which emerged from these comments were: Environmental impacts – what will the environmental impacts be, particularly on Margaret River? What will the impacts be in the context of climatic change?

Futures foregone

Importance of agricultural sector
Agricultural land is a finite resource across the State. Climate change and salinity issues elsewhere make this area an even more important one.
Need security of water – threatens security of the rural area, tourism and economy.
Water is better utilised for food production here than watering people’s lawns in Perth.
New horticulture crops: avocados, pomegranates, macadamias, olives – all high water users. It’s possible to grow without water in this climate, but protracted set-up times. Water leads to a better final product. If want to expand, need access to water.
Need both soil and water. Will reach water use capacity before we reach soil capacity. Land resources can’t be utilised if no water. Still lots of undeveloped land, used for grazing.
Opportunity here is to use the water for agriculture – earn export dollars, feed people, value-added primary produce. Anything that you make in Margaret River is worth more because of the value of the brand the wine industry has created. Eg. Vines in areas within the Margaret River appellation area have greater value than vines outside of area.

Need the water here
If we want a vibrant agricultural sector, sustainable farming, industry and growing towns, we need water here. If you take the water, all these things don’t happen.
Keep all the water options for here.
If tap the Yarragadee and it’s not sustainable, may lead to problems here.
Gracetown is not on mains water. Pumping to Yarragadee but not to Gracetown???

Wine industry issues
Industry largely gets its water from surface water and dams. Some use bores but can have water quality issues (eg. high iron content).
Grapes not affected by Yarragadee – development of region as a whole will be affected because it needs water.
Water availability/restrictions is a big issue.
20% decrease in rainfall over past 3 years (1150mm to 900mm av. annual rainfall).
Under WRC proclamation of area, must have an agricultural enterprise to build a dam – Whicher will license, and all streams will be assessed to ensure streams are not deprived. Shire’s dam policy will match size of dam to size of vineyard. Joint WRC/Shire approach.
Some areas can’t get access -- No further access to bore water west of the highway.

What’s at stake? Lots of money invested in wine industry; industry is huge source of income to Govt. Govt needs to maintain Margaret River as a sustainable region/industry. If proposal produces impacts which make it unsustainable as a region/industry, then it shouldn’t proceed.
Industry is estimated at $750 million plus -- over 100 cellar doors plus 100 additional growers in area.

There are not many businesses in Margaret River that don’t benefit from the industry – either through direct employment, service provision to the industry, end users of the product, or services that exist because of the industry (eg. accommodation, restaurants).
Vineyards account for 40% of rural land use; dairy 50% and beef 10%. But returns are closer to 75% vineyards, 20% dairy and 5% cattle. Vineyards provide good returns/hectare – more viable with land under vines than other forms of farming.

More potential exists here to progressively develop land and increase acreage of vines producing fruit. Eg. Willyabrup area – big area still to plant grapes but can’t develop without water.
If no new dams are allowed, and farmers can’t get water from the aquifer, it would put a lid on future growth. The ones that already have water would be okay, but no one would take the commercial risk to go into viticulture if no water.
Grapes need 1.2 – 1.8 million litres/hectare/annum (need more while growing and less when established). Can get vines up quicker with water – use it to control the ripening process.
Will share the water resource if it doesn’t impact on the industry.

Want to make sure that in 10 years’ time there are more people in vines, so more grapes can be put into the industry to strengthen the growth of the Margaret River label. This is the only way to increase the MR label and brand and continue to build the international profile. If industry is capped through lack of water availability, people won’t come in as growers, which creates a sellers market for grapes, which increases prices and affects ability of industry to be competitive.
Industry doesn’t want to price itself out of the market – would impact on its viability. Wine industry needs to control prices to stay competitive. Probably an extreme view but the unknown is the scary part.

Most people in the industry feel they use their water responsibly. Pumping water to keep lawns green in Perth won’t get a lot of support from people who need water to stay viable.
The right conditions are here for wine. For the well-being of the country, need to develop this region.
Viticulture is the largest investment in this area. See it growing. Can’t see it stopping.

Tourism and water
Jewel Cave – used to have water, now doesn’t. When it opened in 1956, people would go through the cave in a boat. Now no water. $200,000 study to determine why there is no water – drop in water table. Number of visitors to Jewel Cave has gone into steady decline over last 10 years. If water was there, wouldn’t have seen a decline. At same time, other caves are drawing visitors away.
If there was no water in Margaret River, or visual beauty was destroyed, or water reduced in Lake or Mammoth Cave, would have a significant impact on tourism. Currently 120,000 visitors to
Caves each year, income from which keeps the Margaret River Visitor Centre going. Centre is funded by Tourism Association members’ fees, but primarily from caves visitor fees. Therefore huge ramifications if a drop in water at the Caves.

If water table drops as a result of this proposal, geological structure inside Lake Cave might be affected. Stability of structure is checked every three years.

Among Margaret River Tourism Association members (total of 430), 20% are wineries, and another 20-25% exist because of wines and being in this area. One of the largest tourism associations in Australia.

Margaret River is one of the leading icons for WA. Has developed a phenomenal brand in its short time as a region.

Every regional destination seeks to get its brand up. Wine regions of note are important. Here the tourism industry brings people to the cellar door, and the wine industry brings people to the area – a wine/tourism partnership. All Margaret River wine and food trade on this premium quality – expensive and different. Brings high yield, high value tourists from all over the world.

If Margaret River brand was affected, eg if soil was damaged and area lost its premium tag, would be really serious.

Anything that threatens the wine/tourism partnership would be a problem.

Tourism (including the wine industry) is the key driver of the economy here.

Cost benefits in selling the wine at cellar door, therefore getting people to the region and to the cellar door builds up the regional economy.

The key questions which emerged from these comments were:  

Futures foregone – Will we have enough water for growth – agricultural, residential and viticulture -- in the future? We’re already having to change our water use because of climate change. Would this proposal produce additional impacts that we won’t be able to accommodate as a community?

Agricultural viability – Will our agricultural base be impacted to the point where its viability will be threatened? Will farmers still be able to earn a living on the land if water is restricted? Could this proposal ultimately impact on the preservation of rural land for agricultural purposes? If so, what would that mean to our community viability and identity?

Impact on the Margaret River brand – Will this proposal have impacts which will affect the premium Margaret River brand, and the wine/tourism partnership? Changed environmental conditions could impact on the wines, and restrictions on water could cap growth in the wine industry and make it less competitive. Would tourism be affected if the brand was no longer seen as strongly? If so, what would that mean to our community viability and identity?

Benefit and equity in terms of access to water

Proposal comes on top of existing concerns about changing water and weather patterns.

Blackwood is the biggest community concern.

In the last 5 – 7 years, with wine industry boom, farmers have been building dams to irrigate vines. Catchment groups are concerned about the impact of dams. Believe that changing water catchment methods leads to completely different water patterns, leading people to change the way they farm. Have Commonwealth funding to address these environmental issues. There is a real concern about sucking water from the Blackwood basin. Already seeing changes – wondering/scared of what the next lot of changes will mean.
Very concerned about the dams built – not used for agriculture, just for aesthetics. Farming is very stressful as it is. Water issues of availability, cost, more dams and less downstream flow. The Yarragadee comes on top of that. Farmers still rely on holes in the ground (for water).
The real fear from the farming sector is water.
Area is under growing pressure because of declining rainfall -- rainfall is down 15-20%: surface water streams are flowing later and drying up earlier; pollution levels at first flush are significantly higher – occurring across Cape to Cape area.
If mess up the Yarragadee, will create a desert here quicker than the climate change is doing. Should be protecting this area.
In Shire, groundwater resources are fully allocated; and about to proclaim surface water use and allocations.
Margaret River is forecast to be one of the areas that dries up due to declining rainfall. Water is a really big issue here because it is an agricultural economy, with a tourist economy based around agriculture. Agriculture is completely dependent on water.

This is an additional complication on top of other important issues
Community has development needs and economic needs. Still trying to find a balance between those and Yarragadee proposal is an additional complication.
The social fabric and economy is extremely fragile. The Yarragadee is important – don’t want to risk significant impacts that will affect it.

Political pressure/ no control
Feeling of siege that a Govt dept can make a decision that will affect us without the need for consultation, and without reference to what we’ve been planning. Local Govt consults; State Govt doesn’t. Don’t feel we have any control. The Yarragadee proposal has been dropped on us. Assumes that the community is dumb and that the experts are right. A lot of people have been through the RFA. There’s a lot of political pressure to solve the problem.
Last time the Water Corp consulted was in 1993/94 with the Ten Mile Brook plan – did it with bulldozers on site. Very threatening. Fabulous valley which they dammed. Didn’t listen, decision already made. Leads to scepticism.
Whole water resource issue has been handled badly by the State. Direction changes tack all the time. No faith.
This proposal seen as a quick fix – must be seen to be following a thorough process.

Perth should solve its own problems
We manage our water consciously.
Should be educating people to use water less. Should be subsidising people who put in rainwater tanks and use grey water. The Govt is letting these things happen.
Resent that our water is being plundered for Perth. Resent the Government policies.
Shouldn’t pump from one area to another. Perth should solve its own problems.
Once you take the water out, Perth people will become dependent.
Proposal flies in the face of sustainability – taking a resource from one area to prop up another unsustainable area.

Potential benefits?
Can see benefits to the State. What’s happening in Perth is critical. Have to weigh up the benefits against the environmental risks.
It’s a handy resource to help with the development of the region. Can’t argue for that and also say it can’t go to Perth.
How will it be better with this proposal? Sense of loss is driving the opposition

The key questions which emerged from these comments were:  
What benefits will we get from this proposal?

3.6  NANNUP

3.6.1  Existing environment

The Shire of Nannup was founded in 1834. It covers an area of 2,953 square km and embraces the town and localities of Nannup, Donnelly River, Bidelia, Carlotta, Cundinup, Scott River, Lake Jasper, Darradup and Barrabup. The Shire is bounded by the Shires of Augusta-Margaret River to the west, Manjimup to the south-east, Bridgetown-Greenbushes to the north-east, Donnybrook-Balingup to the north and Busselton to the north-west. The Southern Ocean defines the southern boundary.

The Shire of Nannup is the second largest Shire in the South West Region. Situated 288km from Perth, the town of Nannup (originally Nannup Brook) is the only town within the Shire and was gazetted on 9 January 1890 with timber and dairying being its major industries.

Eighty-five percent of the Shire is under forest, however the rich soils, high rainfall and an excellent climate also provides ideal conditions for a wide range of agricultural activities, including dairying, beef cattle, horticulture, aquaculture, agroforestry, viticulture and hobby farming.

Little secondary industries exist and while there is kindergarten to Year 10 schooling available, lack of work opportunities is impacting on the Shire’s population and future development. Tourism plays a large role in the life of the community which in its marketing approach describes the Shire of Nannup as The Garden Village (Shire of Nannup website).

The Nannup area was first explored by Thomas Turner who set out from Augusta in 1834 to explore the Blackwood River. The land around Nannup was originally known as the Lower Blackwood. The area was settled in 1850s and 1860s by farmers who recognised the agricultural potential of the area. From the early 1900s, timber and forestry were major industries in the area. The Nannup timber mill was established in 1926 as the Kauri Timber Company. To provide trees for the Forests Department’s pine plantation program, two nurseries were established at Nannup. By the late 1960s they were producing over 2 million pine seedlings annually.

The existing timber mill began operation in 1964 when Douglas Jones Pty Ltd bought the Kauri Timber Company. The mill was sold to Millars Pty Ltd in 1972 and was secured by Sotico (Bunnings-Wesfarmers) in 1983. For many decades, the timber mill was the major employer in the town.
In 1999, following the signing of the RFA for the South-West, the State and Commonwealth governments announced support for a modern sawmilling and processing facility for the town of Nannup. The new facility would focus on producing high value indoor and outdoor furniture components, flooring and similar products for Australian markets and export. A contract for 20,000 m³ of jarrah sawlogs was specifically allocated to the Nannup facility. The pre-RFA allocation had been 40,000 m³ a year of jarrah sawlogs.

The timber mill was operated by Sotico until May 2001 when it was sold. The mill is now operated by Nannup Timber Processing Pty Ltd (M&B Sales). The mill has been upgraded and a value adding processing facility added. Jarrah hardwood is processed into flooring, furniture components and other pre-dressed and finish-dressed products.

The population of Nannup Shire was 1211 (ABS, 2002), but is now closer to 1400 – 600 in town and 800 rural. Following the trend elsewhere in the South West, the age profile drops for the age groupings 20 – 24 and 25 – 29. Recent times have seen an influx of retirees to the area, and the sale of many rural sub-divisions with more planned.

Two parts to the Nannup community: the township, and the rural areas primarily the Scott Coastal Plain area to the south. There is a considerable scope for the townsitie of Nannup to increase in population in terms of land availability. The Warren-Blackwood Land Release Plan (DPI, 2001, p. 90) noted the “high levels of potential subdivision”.

Agriculture has a significant presence in the area with beef cattle, sheep grazing, dairying, orcharding and horticulture (particularly potatoes). Floriculture and viticulture are developing industries (Social Assessment Unit, 1998, p. 81).

Scott Coastal Plain

The Scott Coastal Plain farming community spans the Shire boundaries of Nannup and Augusta-Margaret River, with the larger component in the Nannup Shire. Roughly rectangular in shape, it extends about 70 km along the coast and about 20 km inland, covering a total area of about 105,000 hectares. Private freehold land covers about 49,200 hectares, with the remainder being State forest, national parks/nature reserves, Crown land and other minor uses. As of 1999, between 400 to 600 hectares of land had been developed for irrigated agriculture in the area (Scott Coastal Plain, 1999).

Europeans first moved into the area in the 1860s and developed coastal cattle runs. In the 1920s, more permanent European settlement occurred with the Group Settlement in the west of the project area. Other lands were also opened up about this time around Milyeannup in the east.

In the 1960s a number of conditional purchase blocks were cleared and the land was mainly used for dairy in the west and grazing in the east. In the 1990s as returns from grazing diminished, farmers in the area began to diversify into other agriculture opportunities. These included dairying and the emergence of blue gum plantations. Some
farmers sank bores into the Yarragadee capable of drawing up to 1,000,000 cubic metres per annum and developed large centre pivot irrigation systems. Further developments included mining, tree plantations, and the upgrading of agricultural and horticultural activities (Scott Coastal Plain, 1999).

A key characteristic of future development of the Scott Coastal Plain is expected to be increased integration of a variety of land uses.

However, even in the mid to late 1990s, the emergence of substantial irrigated horticultural developments were drawing attention to the potential for environmental impacts arising from nutrient export and the longer term sustainability of the industry. Also of environmental concern was the high nutrient and biocide use in the early stages of tree plantation establishment. These and other elements were addressed in an overall catchment management strategy developed by the Scott Coastal Plain Steering Committee in the late 1990s (Scott Coastal Plain, 1999).

**Water source**

Nannup township is supplied from the Tanjannerup Dam (cap 156 ML). With steady growth anticipated for the town the current source and dam capacity is being reviewed by the Water Corporation.

### 3.6.2 Community aspirations and issues

**The Nannup Community Planning Day – February 2005**

The previous Nannup planning day was held in 1997, eight years ago. This planning day was planned jointly by the Shire of Nannup and the South West Healthy Communities Project and was jointly sponsored by both entities plus the South West Development Commission. At the planning day, the community profiled itself and its achievement since 1997 as follows (Nannup Community Planning Day, 2005):

- Highest number of tertiary educated people of all South West towns.
- Experienced rapid growth – fourth highest median house price rise in the State in 2004.
- Adopted the Nannup Flower and Garden Month, incorporating a number of festivals and exhibitions that are becoming more recognised and better attended each year.
- Improved Streetscape.
- Significant growth in the rural sector – including viticulture and dairy.
- Developments have taken place in the mill with changes in jobs but no loss of jobs.
- One of the community wishes at the last planning day was restaurants in town – Nannup now has a selection of good eating places.
- Tourism industry also boosted.

The following priorities for promoting health and wellbeing in the community were (Nannup Community Planning Day, 2005):
1. Develop and market tourism opportunities
2. To produce tourism icons in Nannup Shire
3. To develop and extend existing sporting and recreational facilities in Nannup
4. To develop appropriate infrastructure that is a priority for Nannup
5. Lobbying for electronic communications
6. Employment and education opportunities

There is a strong focus in the community on developing tourism as a contributor to the local economy, as seen by the priorities listed.

Community issues

In one-on-one interviews, several issue categories emerged as having current importance. A breakdown of sub-points on each issue is provided in Appendix 5.

Land availability for development
- Lack of land for development.
- Small rate base
- Current real estate boom.

Infrastructure needs:
- Large shire, small population
- Attracting State Govt timber royalties
- Infrastructure is under strain due to growth.

Improved economic base:
- Improving the economic base will occur by market forces alone.
- Don’t have an industrial base.
- Main industries: agriculture, timber and tourism.

Managing growth and maintaining a balance:
- Southern coast is starting to come under pressure because people want access.
- Resisting development “at all costs”

Social issues:
- Employment
- Keeping young ones in town.
- Education
- Lack of availability of expertise in local workforce
- Health issues
- Community is changing as the population increases

3.6.3 Current tourism activity in the Lower Blackwood -- Nannup

Much of the land on either side of the river is comprised of either State Forest or National Park areas managed by CALM. The proposed Blackwood River National Park - covering
15,600ha - was one of the parks to result from the RFA. Nannup is at the eastern end of this section of the Blackwood.

Both active and passive forms of recreation are popular on this section of the Blackwood. Just west of Nannup the water quality improves as the river passes through forested areas at which point it is diluted by fresher side streams and groundwater discharged from the Yarragadee Aquifer (Department for Planning and Infrastructure, 2004). There are a number of activities that utilise the river including canoeing, dinghy racing, bushwalking, swimming, bird watching, wild flower viewing and fishing. The Blackwood River itself is a large draw card for tourists to Nannup; some of the local residents consider it ‘Nannup’s coastline’. In terms of specific number, CALM maintains visitor numbers for a number of areas along the Blackwood River, which give an indication of the visitors in National Parks, conservation parks, and State forests (Table 16).

<table>
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<tr>
<th>Location</th>
<th>2003-2004(^a)</th>
<th>2004-2005(^b)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barrabup Pool Road(^c)</td>
<td>20,513</td>
<td>16,658</td>
</tr>
<tr>
<td>Denny Road East(^c)</td>
<td>5,873</td>
<td>1,158</td>
</tr>
<tr>
<td>Nannup Shopfront(^c)</td>
<td>1,722</td>
<td>1,791</td>
</tr>
<tr>
<td>Sues Bridge(^e)</td>
<td>10,614</td>
<td>17,078</td>
</tr>
<tr>
<td>Timberline Trail(^d)</td>
<td>270</td>
<td>459</td>
</tr>
<tr>
<td>Warner Glen(^e)</td>
<td>9,555</td>
<td>12,658</td>
</tr>
<tr>
<td>Wrights Bridge Entry(^e)</td>
<td>8,843</td>
<td>8,554</td>
</tr>
</tbody>
</table>

\(^a\): Data collected from July 2003 until June 2004  
\(^b\): Data collected from July 2004 until May 2005 (data for June 2005 not yet available)  
\(^c\): The CALM Shopfront located in the town of Nannup is not open every day.  
\(^d\): Maintains a pneumatic counter for collecting visitor numbers.  
\(^e\): Maintain vehicle counters; numbers provided are based on the numbers /type of vehicle times the average number of passengers.

There are two canoe operators on the river. For one operator, the canoeing operation at River Road is secondary to the tourist accommodation business located next to the river (i.e. Blackwood River Cottages). The second operator’s canoe adventure business (i.e. Blackwood River Canoeing) is his primary source of income. The second operator offers single or multi-day trips with pick up service at the end of the trip. The canoe operation is located at Poison Swamp Road, just upstream of Poison Gully.

Both operators are open year round; however, the winter rains, which increase the level and speed of the river, make July the most popular time for canoeing on the river. The water levels drop during summer making the river un navigable from the first operator’s location, as the level drops to where canoeists would need to carry their canoes at certain points until reaching the point where the river is recharged by fresh water inflows, near Poison Swamp. The second operator is located next to Poison Swamp to take advantage of the recharge that occurs there, making canoeing possible throughout the year. The second operator averages about 400-500 canoeists per year. The river is also used by a number of school groups that bring their own canoes to the river for recreation.
Dinghies also use the river. The Power Dinghy Racing Club (Inc) organises two events around Nannup each year - the Blackwood Classic 250 and the Nannup Cup. Held in October, the Blackwood Classic is a 250 km, 3 day time trial running from Bridgetown to Augusta. It is the world’s longest power dinghy race. The Nannup Cup is a 1 day event, held in June, and is part of the Power Dinghy State Championships.

Another popular activity is bushwalking. There are a number of small tracks that weave around the river. Bird watching is also a popular activity along the river. A number of birds can be spotted by the waters edge, including several types of duck, heron and ibis.

Another popular activity is fishing along the river. The river is a very popular spot for fishing during the marron season which runs for approximately 16 days in late January. The floods of people fill the banks of the river to fish. The banks are more accessible closer to Nannup. Moving down the river westward the land on either side of the river is managed by CALM and once within CALM managed land the bank is less accessible due to the overgrowth of bush.

The recreational marron fishery of the south-west of Western Australia is a unique fishery. Marron is endemic only to the southwest of WA. Marroning has a long history among both Indigenous and non-Indigenous West Australians. A telephone survey of licence holders revealed that the Blackwood River is the most popular water body (river or dam) for marroning (Molony and Bird 2002). The bulk of the marron is caught downstream of Nannup.

The river is also stocked with trout for fishing. Fishing is seen by many to be an activity the whole family can partake in. This is important because the number of families visiting the area is increasing. To date many of the ‘relaxation’ activities have been geared for adults hence the number of child-related activities will need to increase to accommodate the changing visitors, the Shire of Nannup is beginning to explore options for kids.

Many of the accommodation providers in the area also rely on the river. For many visitors the river provides the backdrop for a relaxing getaway from Perth and an opportunity to experience the pristine natural environment. Accommodation includes B&Bs and self-contained chalets. Some accommodation is located very close to the river (e.g., Blackwood River Holiday Cottages, Jalbarragup Homestead), offering visitors the opportunity to wake up in the morning to a view of the river. CALM’s Sue’s Bridge camping and picnic area is located on the banks of the Blackwood River (Sue’s Road off Brockman Highway). It is a large site with discreet camping areas dotted through the forest. Activities include swimming, fishing and canoeing.

The St John Brook is a northern tributary of the Blackwood located 7 km north-west of Nannup. The surrounding area is predominately state forest and is proposed for two conservation parks - St John Brook Conservation Park and Jarrahwood Conservation Park. The parks will abut the St John Brook and connect to a wider network of proposed
reserves including Butler and Blackwood River national parks. CALM has prepared a draft management plan for the proposed conservation parks (2004).

The proposed St John Brook Conservation Park is currently part of State Forest No. 6, 28 and 33. The proposed Jarrahwood Conservation Park (Reserve 615) is an unvested class C reserve. It is proposed that the parks be reserved as Class A reserves, vested in the Conservation Commission. The parks comprise “high quality riverine ecosystems” (Conservation Commission, 2004, p.2).

The proposed Jarrahwood Conservation Park has limited visitor use and opportunities, primarily due to its small size. However the proximity to Nannup makes the area proposed for the St John Brook Conservation Park particularly popular with visitors and locals. Activities include picnicking, sightseeing, swimming, fishing, camping, motorbike riding, four-wheel driving and bushwalking. The area attracted approximately 21,000 visits between July 2001 and June 2002. Most visit the popular CALM day-use area at Barrabup Pool, the CALM’s day-use and camping area at Workmans Pool (sometimes identified as Workers Pool), and Cambray Siding.

St. John Brook is a popular local area for swimming, especially Workmans Pool and Barrabup Pool. Barrabup Pool and surrounds contribute to the “community’s sense of place as a venue for social and recreational activities” (CALM 2004, p.19). It has been a gathering place and swimming hole since the mill was established in 1908 (Pearson et al. 1997).

Bushwalking within the proposed St John Brook Conservation Park occurs along the 20 km Old Timberline Trail, which runs along old rail formations between the Nannup townsite and Cambray Siding, connecting Barrabup and Workmans Pools along the way. The planned Stage 2 of the Munda Biddi Mountain Bike Trail will traverse the proposed St John Brook Conservation Park as it makes its way to Nannup.

The proposed St John Brook Conservation Park contains cultural sites of the early settlement and timber cutting days. In 1908, the WA Jarrah Saw Mills Company established the Barrabup town and timber mill. The Barrabup timber mill was then transferred to the present Nannup mill site in 1925 (Conservation Commission, 2004). (See map below).

As part of the RFA, $2 million was allocated to seal Mowen Road. This road starts at Rosa Brook near Margaret River and ends at Nannup passing over St John Brook. This will increase tourist access to this area.

Tourism has become an increasingly valuable part of the economy of both the Shire and Town of Nannup. The town’s location alongside the Blackwood is critical to its tourism strategy. This historic mill town is an end/start point for the Blackwood River Valley Tourist Drive (Route 251) between the towns of Nannup and Balingup (i.e., the ‘Magic Triangle’). Other scenic drives include the Nannup-Donnelly Scenic Drive, the River Road Drive and the Jarrah Forest Drive which passes Darradup House the oldest building
in the district. The Nannup Heritage Trail provides a pleasant 2.5 km walk around the town.

Proposed St John Brook Conservation Park (CALM 2004)

Beyond the Blackwood (Lake Jasper)

There are also a number of waterways in the surrounding area that appear to attract tourists, including Lake Jasper. Located within D’Entrecasteaux National Park, Lake Jasper attracts a number of different types of tourists, primarily 4WD enthusiasts and those seeking to view pristine waterways. The lake attracts nature enthusiasts in part because it is WA’s largest permanent freshwater lake (The Wilderness Society, 2004).

Much of the park is managed for its wilderness values, so few facilities are provided (CALM Naturebase website). There is a CALM operated campground at Lake Jasper with a shaded camping area, barbecues, picnic tables, water and toilets.
Map 3. Blackwood-St John Brook-Nannup

1. Workers Pool Camping Area
2. Barrabup Pool Picnic Area
3. Timberline Walk Trail
4. St John Brook
3.6.4 Community views about potential impacts from the proposal

Comments made during the one-on-one discussions were analysed into themes, and grouped into three main areas of social impact.

Sense of place

Protective of environment
Nannup town people are environmentally conscious. Have chosen to be there for lifestyle, and the environment is a key reason why they’re there. Very protective. Don’t want to see the water issue mismanaged.

Have seen it before with Jandakot, Gnangara and Murray-Darling. Reasonable to expect that people are scared of the environmental impact.

It’s up to the proponent to convince the community that there will be no adverse environmental effects. If can’t give a definitive answer on impacts, the risk isn’t worth it.

Impact on Nannup is a lesser concern than the broader environmental scenario. If there’s the remotest possibility that environmental impacts could occur, stay away from the proposal.

Recharge info is not forthcoming. If taking out less than the recharge, not a problem.

Community identity is linked to the environment – tourism, horticulture, agriculture and timber. Jealously guard what we’ve got and embellish what we’ve got to develop tourism. If we can’t have water to attract industry, will need to do other things to attract tourism.

Bores, wells, dams and streams – what happens when we further draw on reserves?
Makes people feel secure if climate change continues, that it’s there. Can fall back on the aquifer.

People come here for the environment
Nannup relies on the environment to draw people here.
Don’t want this proposal to be the goose that killed the golden egg.

Domino effect – environment changes social amenity and economics.
Nannup is a tourist town. If you destroy through lack of water, what’s left?
If there was an environmental change eg. if coastal springs dry up on the Scott Coastal Plain it would limit economic development and change lifestyle – marroning, canoeing, racing boats on the Blackwood. Lots of people use it.

If you take out some of the nice things about living in Nannup it takes away some of the reason for being here. Not flash jobs, but the environs make a difference for them.

Health of the Blackwood
River gets flushed (removes salinity) from Sue’s Bridge down to Augusta
Still catch fish – cobbler and trout
Can drink out of streams that run into the Blackwood without boiling the billy
Water level varies, but even in summer can still use the Blackwood – hasn’t dried up yet
Previous model said Blackwood would drop between 600ml – 1 metre. If Blackwood dropped 150ml we’d have pools and puddles. Lots of springs and soaks here would go.

Eco-tourism site. In winter it’s fast flowing – like to see a large body of water.

River is low now – people are worried that climate change is impacting the river. Is climate change being factored into modelling? Fearful of any more unnatural interference.

Social impact
If take water out of Nannup, industry will dry up.
Agriculture brings in $20 million to the Shire; involves 40-50 families directly, plus employees.
Life threatening for the dairy industry.
Cundinup (north of Nannup) could be a big agricultural base but hasn’t been developed. Land price is affordable. If Yarragadee water available, figures start to stack up. If no Yarragadee, half the viability gets taken away.

Auxiliary businesses need a mass of businesses. Eg. need 6 or 7 orchards our size and you’d be able to sustain a trucking business locally. Now we spend $35-50,000 outside Nannup on transport. This is what could be restricted if no Yarragadee water.

If things go wrong with water, it tips our community in a dangerous way. Picked ourselves up after the timber industry. Feeling very positive about social things – but wondering are we going back there again? “Don’t need another kick in the teeth”.

Understand this is a State resource. Have to be sure of our community’s survival. Have to be convinced that it’s okay to take the water. That our community won’t have big problems.

Use of the Blackwood
Lots of little tracks go in for camping
Recreational fishermen, fishing and canoeing
More people in spring and autumn – Sue’s Bridge at Easter very popular
Just the aesthetics attracts people.
School groups go in for kayaking and walking
Opportunity for the Blackwood – could use it as a water trail, like the Bibblemum – a “paddle, peddle, plod” trail. Could be an opportunity for farmers. Very user friendly.
Eco-tourism potential unrecognised and not developed.

The key questions which emerged from these comments were: Environmental impacts – what will the environmental impacts be on the Blackwood River? Will the Blackwood change? If so, will that reduction in amenity mean that people won’t visit the area? Will this impact on tourism numbers affect our viability as a community, given that we rely strongly on tourism?

Futures foregone
Proposal removes economic opportunity
Our Shire is the most affected by this proposal.
For Shire to survive, need to develop agriculture, with the potential to develop intensive crops over the next 20-30 years. The one asset of the Shire is the small horticultural base – if you restrict horticulture then you restrict economic returns.
We have the natural resource, and Water Corp is removing it. In doing so, it is removing economic opportunities. People understand the need to have water, but economic opportunities will be lost. Communities have a unique opportunity to attract industry. May lose this if the water gets taken.
Sustainable communities won’t be able to be developed.
Fast growing area here – need the water here. It’s not an issue of water going to Perth – it’s that we want it here.
Scott River potential. Peters dairy – 95% of milk will come from Nannup by next year.
“Don’t want Perth spoiling it for us”.
Everyone wants a share. Scott River would increase production by tapping into Yarragadee.
Manjimup Shire will want access for cauli and potatoes. If a chip mill goes in, it will want water.
Scott River don’t want to see a lot of water go to Perth that they could use. Us (on banks of Blackwood) are worried about access, quality and quantity of water – all about lifestyle.
Huge potential north of Nannup (Cundinup) using Yarragadee water – not yet developed.
Tourism is fickle, an adjunct to a base business. Margaret River has the vines and dairy. Nannup needs a base. If Yarragadee is taken at this point, it restricts economic development.

Concern is based on not knowing how much water is there.

If it restricts development in the Shire, then it kills our Shire – our opportunities are limited because of size. Rate base in Nannup is small.

Certain sections of horticulture are not making money. If you deprive the area of that potential, they don’t get the opportunity. One on its own would be battling, but with mass and volume you can get the price up.

Pulp mill needs 20GL – might not come here if we don’t have enough water.

Decentralisation will be off the agenda if we don’t have water.

The key questions which emerged from these comments were: *Future foregone* -- Will we have enough water for growth – agricultural, residential and tourism -- in the future?

We have a small rate base so need to maximise the opportunities we have. This is about survival, and knowing we have sufficient water available to support intensive dairy, intensive agriculture, potential industry, and housing development. Want to be sure that our community won’t have big problems.

**Benefit and equity in terms of access to water**

*Equity*

“There are water restrictions here, yet you’re taking our water to Perth.”

If water goes to Perth, will Bridgetown and Manjimup be satisfied?

Concern about industry getting cheaper access to water.

Taking water to Perth increases your values, decreases our values.

Uncertainty about impact on bores

Prospect of Yarragadee impact on bores affects potential investment. Eg. rainwater tanks are now a preferred option for new homes than bores.

Big implications for those not on scheme water – they stand the chance of losing water.

Impacts on water table, on the Blackwood, and on agricultural practices restricted by lack of water.

“Our spring’s dried up because of climate change and blue gums. We’ve got to go into the Leederville – paid for a bore. If drops too far, water quality won’t be there, and would have to rely on rainwater tanks. If couldn’t get water, would have to put in reverse osmosis plant to get drinking water.”

“If water level starts dropping we’ll be in trouble”.

Whole place is drying up. In 1995 springs and waterfalls were running well. Springs now running dry. Have to get alternative water – deeper and deeper bores. Costs $7000 for a bore, up to $15,000 to drill, plus power for pump and fuel. Therefore a cost.

*Lack of trust*

Have friends in the timber industry. Have seen the way decisions were made there, where politics rather than the science ruled the day. Staggering lack of trust that the right decisions will be made.

Here Water Corp is dealing with a lot of baggage it hasn’t generated.

Decision’s already been made. Have put in production bores, have put out tender for pipes, and have decided on route for pipeline.

Impotent/frustrated – widespread view
We’ve had water problems for 100 years. Been brought up with water management – it’s how we live. Don’t want water to go where it will be wasted by people who don’t value it.

Potential benefits?
Levy is not what it’s all about.
Could be benefits. Risk/cost involved would outweigh any benefits.
Could supply mains water for subdivisions via pipe from the monitoring bores. In our area – Jalbarragup – there are 4 monitoring bores, 150mls, capable of pumping out a heap of water. Could run a pipe to a pumping station, and install a spur pipe to tanks on local properties with a meter on it. Properties could then pump water when they need it. If supply everyone with good quality water, you’d solve everyone’s problem. Would be simple for Water Corp to cover with pipes or a stem pipe at the bore. Or communal bores and a system off it instead of separate bores.
None – will be automated, no jobs. It will take from our Shire. Unless there was a trade-off.
Would there be an opportunity for people to take water from the pipe – if there was a caveat on land, would those people get access? Would make a difference to those people.
If Yarragadee went ahead, and water was provided to Boyup Brook etc, or if there was some incentive for intensive horticulture in some areas on the way up, rural people would not be so opposed. Different if a sealed pipeline – a “take” straight to Perth.
Water Corp earns money for the Govt by selling water. If you’re going to take a resource, area should get an allocation in return for the asset. Eg, taking a timber asset out of Nannup should lead to a percentage of timber revenue coming back into the area. Not an ideal solution, but a solution.

The key question which emerged from these comments was: What benefits do we get from this proposal?

Additional comments from the Scott Coastal farming community add perspective to these social factors.

Sense of place

Social impact
Potential social impact (Scott Coastal Plain) is loss of community, which might mean that infrastructure doesn’t happen (eg. roads, community hall for meetings, internet coverage).
More ratepayers living in the area, leads to more spending in the community.
More people in the area makes possible the upgrade of telecommunications.
More families lead to schools, to buses and other employment opportunities.
The proposal will shut this area (Scott Coastal Plain) down. Not just the community here, but farms inject $1million/farm into the community through use of services (eg. electrical contractors, irrigation people, milk truck drivers).
Everyone here (Scott Coastal Plain) owns property, passed from generations. All have a link with the land.
30-40GL is needed here from now forwards. Think about the increase in productivity that would happen if we could use that water here. Think about what it would do for employment, export earnings, service industries, schools, taxes and rates increases for the Shire. If Water Corp takes 45GL to Perth, how many jobs would that create? How many export earnings, service industries, schools, taxes and rates increases would happen in Perth? Get the figures and compare.
Shire would much rather have letterboxes along here than blue gums.
School bus now carries 19 kids to Scott Coastal Plain – a year ago it was only 5 kids.
Futures foregone

Proposal removes economic opportunity
Scott River area is the last agricultural area to be developed in the State. Finished clearing three years ago, and just starting production. Huge potential for dairy – twice as much production as the Harvey area.
Being held up with further economic investment until Water Corp application is decided. “It’s like a bomb’s gone off – everything has stopped while the Water Corp application is being decided.”
If don’t have irrigated agriculture will end up with blue gums – offers more than farmers can get any other way – but doesn’t contribute to local economy. “Trees won’t contribute to the community.” In turn, A blue gum monoculture will affect recharge and dry up wetlands. Farmers need to decide whether to invest in infrastructure (power, water, bores, irrigators – a $1 million investment) or blue gums.
One farmer new to the area has received a water licence and plans to grow pasture for beef. In past, area has had little tourist development. In the future, this could change. “Pity to put it into blue gums – it’s boring aesthetically and kills the area. Should be attractive for people to drive around and see greenery and cattle etc. Will help the area improve.”
Scott Coastal Plain land is flat and suitable for pivot irrigators. Very efficient with water. Only watering the top 6-8 inches therefore environmental run-off is minimised. With irrigation, more cost-effective to produce. Not a lot of land left and available – don’t want to lose any more.
Any products produced here – export caulis, spuds and beef – command good value in the shops. Concern is loss of production potential. Double whammy if can’t get water (through licences) and bores dry up.
In relation to water, Scott River is seen as an area of opportunity. Employs milkers including unskilled workers. NZ company is considering buying land to establish a dairy for 3000 cows – large-scale dairy. Can’t get a water licence. Won’t happen if he can’t get water. Scott River is the best he’s seen for dairy because of pasture and climate.
Proposal means water going from a low evaporation to a high evaporation environment – can put it to good use here. Eg. At Bindoon there are big bore irrigators and the evaporation is 4 times as much as here (Scott Coastal Plain).

The key questions which emerged from these comments were: Ensuring agricultural viability – Will this proposal stop us getting access to the water we need for continued agricultural development? If so, will we lose farmers and if we lose farmers, we’ll lose our community.

Benefit and equity in terms of access to water

Issues with water allocation applications and water security
For Scott Coastal Plain farmers, water security is paramount in relation to licence conditions, length of tenure, discretion to alter license. It’s a big investment and they don’t want someone playing around with it. The uncertainty is daunting – whether there’s a possible impact on their water access. Licence security is important – has an economic impact.
The real issue is that they are making adjustments to their own livelihood – and this is an extra element to content with.
Concern about security of water. If no security, Scott River area would end up as blue gums.
Have seen the problems with Murray Darling where there were massive miscalculations about how the borefield works. Concerned that if there’s a problem with Yarragadee, the locals would
cease to have access to allocations. Concerned that what happened to Murray Darling might happen here. Plenty of other examples also: Harvey Pines, Gnangara Mound, Namoi in NSW. One beef cattle farmer has an application in for irrigation – application being held up due to WC. Is half-way through a business plan. If can’t get water, has just wasted the huge investment already undertaken.

One export seed potato farmer has applied for extra water to increase production – application being held up due to WC. Has had to knock back export orders and is fearful of losing current orders as clients may go to other producers who can supply the bigger quantities. $2 million investment at risk.

Difficulty also with WRC application requirement that applicant must scientifically prove that the development will have zero impact on the environment. Involves a $15-20,000 research study. If the development doesn’t go ahead, there will still be impacts caused by climate change. Previously, incremental development was allowed without having to do a study.

Difficulty with the 2-year licensing timeframe. Farmers only get a 2-year licence. “Hard to reduce the debt over 2 years.”

One dairy farmer isn’t looking to expand now, but could increase the business four or five-fold, and wants to be able to hold on to the water so it is available when the time is right for development. Concern is about the future for growth.

One seed crop farmer could increase seed production if had the capacity to irrigate over summer. Hasn’t put in an application – is dreading the environmental study – but has good potential to intensify production.

One beef cattle farmer has an application in for irrigation to develop centre pivots – application held up due to WC. Land is dear (blue gums paying $6000/hectare) so the only way to expand is to intensify. If application was granted, would be able to run more stock/hectare, and use irrigation to grow grass for summer grazing.

Two share milkers (working for a company that owns three farms) are looking for water security as dry land farming is not sustainable. There’s not enough milk in the system now. Could produce more – one property is running at only one-third of its potential. Perceive that the WC application would put a halt to further development. Costs $75-80 to produce grass vs $150-200 for silage of same amount of feed. Without irrigation, farmers have to feed at a higher cost during summer. “Dairy people are interested in buying land, but no-one will invest if no water security. Lack of water security is frightening potential investors”.

One vegetable producer is using all available water now. If wants to expand, will need to apply for another bore licence. Market demand drives the decision to expand.

Scott Coastal Plain farmers would like 30GL in reserve for future development. Landowner has to spend a lot of money on environmental studies before a license is granted; plus up-front infrastructure costs – approximately $400,000 for 40 hectares.

Uncertainty about impact on bores
Main concern is that we get a confirmed and continuous supply of water.
If there was a half-metre drop, wouldn’t get the water out and would have to put in another bore to go deeper. Licence is tied to the level of water.

Competition – either/or
Believe they won’t get their access if Water Corp gets it. Either/or.
Have been threatened that if they don’t use their allocation that their licences will be reduced – seen by farmers that it’s being taken by Water Corp.

Will they stick with 45GL?
45GL opens the door. Will up the ante when it’s in. Once they find it’s an easy way to get water, will they keep increasing? The more they can nudge it, the less other options they have to investigate. What will happen then? Bores will go lower.

The key questions which emerged from these comments were: *Security of water* – will we still be able to get the water we need? Will our bores be affected? Will we have a confirmed and continuous supply of water? Will our applications be approved?

3.7 Social values of the Blackwood River – Existing environment

The dominant social values of the Blackwood River and its surrounds are:

- Aboriginal sites of cultural significance;
- Historic features and cultural sites of early settlement;
- Tourism and recreation values; and
- Areas of high scenic quality.

Collectively these contribute to a strong ‘sense of place’.

3.7.1 Indigenous Cultural Values

The Blackwood River retains significant heritage and cultural value for the Aboriginal community. There are numerous sites in the vicinity of the Blackwood River on the Department of Indigenous Affairs (DIA) Register of Aboriginal Sites. This includes sites such as the Hardy Inlet (archaeological deposit, camp), Blackwood River Ochre Deposit, Sue’s Bridge (meeting place, camp, hunting place), Blackwood Riverbank (mythological), and Barrabup Pool (mythological).

The value of the region was highlighted in the 2003 South West Yarragadee - Blackwood Groundwater Aboriginal Cultural Values Survey commissioned by Water and Rivers Commission. At the time of the study the Blackwood River was undergoing assessment by the DIA based on its mythological significance in relation to the Waugle. Those consulted in the study considered the river and its associated aquifer to be of the ‘same spiritual energy’, meaning the aquifer is also associated with the Waugle. As a result those consulted thought the river and its tributaries should be considered for registration as a site under the *Aboriginal Heritage Act 1972 (WA)*.

The Blackwood River also held importance as a place for food, including fish, marron, and duck (Goode 2003), for the Aboriginal peoples. The river was also identified as a territorial boundary between the Pibbelmen and Wardandi language groups (Goode 2003).

The proposed St John Brook and Jarrahwood Conservation Parks are significant for members of the Bibbulmun Tribal Group as St John Brook was a travel route along the Blackwood River. People of this group employed a mobile lifestyle, moving along river systems in search of alternative food sources. River pools were particularly significant as sources for food and as camping locations. Three pools (Barrabup, Workmans and Cambray) were identified by Goode (2003) as sites of mythological significance, in
association with Waugal beliefs. Within the proposed Jarrahwood Conservation Park is the Nannup Scarred Trees site, registered under the Aboriginal Heritage Act 1972. The area around Barrabup Pool is currently being considered for registration under the Aboriginal Heritage Act. The parks are currently covered by one registered native title claim (i.e. WAG6279_98 South West Boojarah) (CALM 2004).

Pearson et al. (1997), as part of the Regional Forest Agreement (RFA) process, examined Aboriginal heritage places in the South West. Places were evaluated using the criteria employed to determine membership in the National Estate. Some features were already listed while others were not listed but had sufficient attributes to be listed. Both the Blackwood River and the Scott River Engravings – Dunnet’s Farm were identified. Neither is currently listed in the National Estate but both were evaluated as having significant values.

The Blackwood River (in its entirety, including its banks and immediate surrounds) was identified as having high social and cultural value. “It is of high social value to the Busselton Noongar community because it was and is used as a place for hunting, fishing, marroning and camping. Culturally it is also significant because there are various sites located along the river” (Pearson et al., 1997).

Scott River Engravings (Dunnet’s Farm) has over 100 motifs engraved into a series of limestone tablets located on privately owned land south of the Scott River. The engravings are predominantly animal tracks ranging from emu tracks (the majority) to those of smaller birds. They are in good condition; however, as the engravings are in located in limestone they are susceptible to erosion. The engravings are valued for their aesthetic significance and because of the social and cultural significance they have for Noongar people of the lower South-West.

Another site listed on the register and on the Register of the National Estate is Lake Jasper. It has been on the Register of the National Estate since 1978 (Class: Indigenous; Status: Registered). It is an Aboriginal archeological site of significance. Lake Jasper contains Australia’s only underwater prehistoric site of human habitation (Western Australian Forest Alliance 2005).

### 3.7.2 Non-Indigenous Heritage and Cultural Values

The State Register of Heritage Places recognises places of cultural heritage significance in Western Australia. Once listed on the Register, a place is protected “by ensuring that any proposed demolition, relocation, subdivision, amalgamation, alteration, addition or new development is in harmony with its cultural heritage values” (Heritage Council of WA n.d.). The cultural heritage value of places proposed for listing is assessed using the following criteria: aesthetic value, historic value, scientific value, and social value. The degree of significance is determined by rarity, and representativeness (Heritage Council of WA n.d.).
Within the Blackwood River study area (Augusta-Nannup) two heritage features are listed on the State Register of Heritage Places (Table X). They are Jalbarragup Bridge and Brockman’s Bridge both in the Shire of Nannup.

Several additional features are listed on the Australian Heritage Council’s Register of the National Estate (Table X). These are Alexandra Bridge (Brockman Hwy east of Karridale), Donnybrook Sunklands Areas (Blackwood River and Hardy Inlet), Scott National Park, and Black Point (D’Entrecasteaux National Park). Both Augusta and the Town of Nannup have numerous places listed in their respective municipal heritage inventories but none are listed on the State Register of Heritage Places.

### 3.7.3 Brief History of Settlement along the Blackwood River

Before the arrival of Europeans to the Leeuwin-Naturaliste Region, the Wardandi (*The people that live by the ocean and follow the forest paths*) and Pibelmen (*The people with plenty*) Nyungar people had lived in the area for more than 40,000 years (Sanders, 2004). The Blackwood River has been identified as a territorial boundary between the Pibelmen and Wardandi language groups (Goode 2003). The Nyungar followed a “pattern of seasonal movement within their tribal territory, in search of food, constructing temporary housing known as mia-mia from the vegetation close to their food source to protect them from the weather” (Sanders, 2004).

Europeans first charted the Leeuwin-Naturaliste Region in 1622. But several hundred years would pass before the first settlements. The year after the Swan River settlement (Perth) was established, a group of settlers led by the Molloy, Bussell and Turner families landed in Augusta at the mouth of the Blackwood River on 2 May 1830. Captain Stirling had directed settlers to the area in the hope it would produce livestock and grains for export back to the Swan River and beyond. It was envisioned that Augusta would become an important trading stop for vessels travelling to the eastern colonies and would one day ‘boast a fine port and become a fine city’ (Cresswell, 1988 as cited by Sanders, 2004). The first settlers attempted to establish small mixed farming estates at Augusta. By the mid 1830s, most had moved further north to Geographe Bay (Busselton) due to the unfavourable conditions at Augusta.

The earliest recorded European exploration of the Blackwood River started from Augusta. In the early 1850s Perth merchants George Shenton and James Davey employed convicts to cut timber in the karri forest behind Augusta. The timber was rafted down the Blackwood River for export from Flinders Bay. This operation was short lived due to inadequate port infrastructure (Sanders, 2004).

During the next phase of the development of the timber industry in the 1860’s, major entrepreneurs transformed the industry from struggling, small scale concerns reliant on convict labour to a large scale, well financed, automated industry which significantly changed the local environment and cultural landscape.
By the mid-late 1800s, timber cutting had become the major land use activity in the Leeuwin-Naturaliste Region. It provided the impetus for the development of port facilities, railways, roads and townships. It opened up the landscape, through the removal of the tall timber, which facilitated further agricultural expansion.

It was not until around 1857 that the first settlers established homes in the Blackwood River valley. The early settlers were involved in raising sheep and cattle. By the late 1860s the settlement had spread along the fertile river and stream valleys, with large pastoral leases. The Blackwood River valley floor was cleared for homesteads, orchards and crops.

The rate of growth in the Blackwood River valley increased rapidly near the end of the century with the discovery of tin near Greenbushes in 1888, the development of the sawmilling industry and the coming of the railway. While the train line no longer exists, 1909 saw the construction of a railway from Jarrahwood to Nannup which then linked to the South Western Railway. By 1913, Greenbushes’ population had grown to 2000.

Due to isolation and lack of transport, no sawmilling industry developed until the 1890s. By 1895, Scott’s Sawmill was operating in Bridgetown. The arrival of the railway to Bridgetown in 1898 further boosted the timber industry. Two additional mills were constructed north of Greenbushes. During the 1890s local apple orchards provided fruit for the fast growing towns in the Goldfields. As the region’s population continued to grow, new settlements tended to establish further south in the Manjimup region.

Due to unsustainable forestry practices, by 1913, all the major timber mills had closed in the Leeuwin - Naturaliste Region (Sanders, 2004). During the 1920s, the first large tracts of land in the southwest were dedicated to state forest under the control and management of the Forests Department. The Group Settlement Scheme (1921 to 1930) brought new farmers to the area. The Scheme was intended to bring families to bush areas and establish a dairy industry in the region. During the Depression of the 1930s, dairy farming became an important agricultural land use within the Blackwood River Valley.

By the late 1950s there was an overall agricultural slump particularly in dairying. The Forests Department embarked on a program of purchasing farmland in the Blackwood River Valley to grow pines. By the early 1960s many people had turned away from dairying.

There were some local objections to the pine plantations. Some feared the pines would extend along and abut the major scenic drives through the valley, obscuring the views of the surrounding countryside. In response, a landscape management plan for the Blackwood was prepared by the Forests Department in the early 1970s. The objective of the plan was to identify the major visual attractions of the valley so that steps could be taken to preserve these attractions. In the years since, greater emphasis has been placed on the preservation of scenic values (Christensen et al., 1981).
In the early 1960s, surfers and people seeking alternative lifestyles began to move from Perth down to the Leeuwin-Naturaliste Region, especially the coastal areas such as Margaret River. The reputation of the region’s coastline as a premier surfing destination generated an increase in visitation to the region and the beginning of the modern tourism industry (Sanders, 2004). In the late 1960s, viticulture was established as a commercial industry in the South West. In more recent times, a number of vineyards and small boutique wineries have established in the Blackwood River Valley including Blackwood Wines in Nannup. The Blackwood Valley Wine Industry Association was formed in 1996 following an increase in the number of vineyard plantings in the region in the mid 1990s.

The 1999 Regional Forest Agreement (RFA) added 150,885 hectares to the formal conservation estate in the South-West forest region. For the timber industry, it meant a significant reduction in the annual allowable level of the jarrah and karri sawlogs. The annual level for jarrah sawlogs dropped from 482,000 m³ to 286,000 m³ from 2004. For karri sawlog the drop was from 203,000 m³ to 178,000 m³ from 2004. The Government provided a $41.5 million timber industry development package to assist the timber companies and timber-dependent communities (e.g., Nannup) to adjust to the new arrangements. The industry was to refocus on value-adding and downstream processing.

### 3.7.4 Recreation and Tourism

There is an important relationship between tourism and recreation. Recreation is defined as the range of social, cultural, sporting and other activities undertaken in leisure time. While not all recreational activities are classed as tourism, there is a significant overlap between tourism and recreation (Tourism WA, 2004).

In Australia, the tourism sector is valued at over $70 billion per annum, a third of which is from nature, eco and adventure tourism (Department of Industry, Tourism and Resources 2003; Wegner et al., 2004). A significant portion of the tourism industry in Australia revolves around wildlife, natural areas and their associated attractions (Hughes & Carlsen, 2004). This is also true of the South West Region.

A 2004 study of why tourists visit the South West found those most likely to visit the region were looking to ‘relax and take it easy’ or seeking outdoor adventure activities (Tourism Western Australia and the University of Western Australia). Both of these visitor categories rely heavily upon the pristine natural environment of the South West including its coastal areas and inland forests (including rivers).

Within WA, the South West region is second only to the Perth region in terms of visitor numbers. In 2003-2004, a total of 2,150,100 visitors stayed overnight in the south west (Tourism Research Australia as cited in Tourism WA 2004). A large majority (92%) were domestic visitors (inter and intra-state). The South West is most often visited in January, followed closely by April, July and October. These times primarily correspond with school holidays; indicating the popularity of the region for families throughout the year. The peak time for international visitors is October to December (36%). Annual tourism value to the south west is estimated at $588 million (SWDC, 2004a).
For the period 2004-2014, Tourism WA (2004) projects a small but positive average annual growth (0.9%) in domestic visitor nights for the South West. An average annual growth rate of 5.1% is projected for international visitor nights over the same period. These annual growth rates are similar to those projected for the state as a whole.

Increasing tourist numbers are accompanied by additional stress on the same natural features on which the local tourism industry is dependent. These natural resources need to be sustainably managed both for their own sake and to provide security to the nature based tourism industry.

This is a particular concern for the Busselton - Augusta area which is recognised as one of 15 national ‘biodiversity hotspots’. This area is rich in plant and animal species and includes habitats ranging from coastal plain heathlands and shrublands to inland forests and woodlands. It offers habitats to many endemic and endangered plants and a wide range of native invertebrates. They are also under threat from over-grazing pressure, changed fire regimes and habitat fragmentation. These have the potential to affect these landscapes and threaten the viability of species such as Carnaby's Black-Cockatoo, the Chuditch (or Western Quoll) and Brush-tailed Phascogale. Caves systems with significant aquatic invertebrates could be threatened by changes in groundwater movement (www.deh.gov.au/biodiversity/hotspots/).

The RFA studies revealed that the forests were a significant attraction for visitors to the area. The majority visitors stay at key tourist nodes throughout the south west region (Mandurah, Bunbury, Busselton, Dunsborough, Margaret River, Augusta, Pemberton and Albany) and make day trips out to features such as the karri and jarrah forests. “This suggests that the forest landscapes have a broad scenic appeal and form an integral part of the whole tourism package that attracts visitors” to the region (Social Assessment Unit, 1998, p. 21).

**Blackwood River Area**

The RFA study (1998) described the Blackwood River as having a “dispersed nature-based tourism product with key themes developed around the river and other waterways, the jarrah forest and associated scenic drives. Major nodes for tourism in this area are the towns of Bridgetown, Nannup and Balingup, as well as the Blackwood River itself.” (p.5). [note: Bridgetown and Balingup are outside the study boundary]

The Blackwood River Valley is often referred to as the “start of tall timber country”, where the landscape transitions from rolling hills and farms into karri forests (www.westernaustralia.com).

Tourism WA’s *Pathways Forward: Strategic Plan 2003-2008* identified the need to “develop and promote tourism around key iconic experiences” to provide a platform for a competitive and sustainable tourism industry. They defined an iconic experience, attraction or event as “awe-inspiring….unique to Western Australia, has the potential to
draw significant visitors here…..gaining recognition nationally and internationally” (Tourism WA).

In South West’s ‘Forest Experience’ is labelled an iconic tourist attraction. As part of the development of iconic attractions, a number of ongoing or future projects (Table 17) have been identified in the Blackwood River area (Tourism WA, 2004).

Table 17. Iconic projects in the Blackwood River area.

<table>
<thead>
<tr>
<th>Project</th>
<th>Description</th>
<th>Agency</th>
<th>Cost</th>
<th>Completion</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blackwood River Valley</td>
<td>Develop a range of family activities, trails, galleries and interpretation.</td>
<td>Tourism WA</td>
<td>N/A</td>
<td>N/A</td>
<td>To be investigated</td>
</tr>
<tr>
<td>Nannup to Jarrahwood Rail Trail</td>
<td>Develop the 30km Nannup to Jarrahwood Rail Trail</td>
<td>CALM</td>
<td>$98,000</td>
<td>To be determined</td>
<td>Planning</td>
</tr>
<tr>
<td>Blackwood River National Park</td>
<td>Redevelop visitor facilities at Sues Bridge camping area.</td>
<td>CALM</td>
<td>$180,000</td>
<td>2005</td>
<td>Planning</td>
</tr>
<tr>
<td>Nannup Foreshore Park</td>
<td>Develop an amphitheatre and visitor facilities on foreshore adjacent to Blackwood River and Nannup Visitor Centre.</td>
<td>Shire of Nannup</td>
<td>$300-400,000</td>
<td>2005</td>
<td>Planning</td>
</tr>
</tbody>
</table>

3.8 Summary of views on what would make a difference to how people feel about the proposal

As part of the community interviews undertaken in phase one, community members were asked if there was anything that would make them feel differently about the proposal. The key themes related to:
- better community knowledge about what else Water Corp was doing to reduce water demand and improve efficiency, particularly with major water users;
- supply water to the SW solely, or at least before supplying it to Perth;
- better communication about the other options for water supply being actively considered by the Water Corp;
- get Perth to manage its water needs sustainably without need to draw from elsewhere;
- make sure the aquifer is well understood before any action is taken;
- better communication about the project itself;
- Water Corp to give something back to the Shires; and
- Look at cost of water.

The full set of comments is detailed in Appendix 6. These comments indicate community concerns about understanding the aquifer better and knowing what its impacts will be, and a concern that the right priorities and values are driving the Water Corporation in this project. All of these points have been considered in the development of the final proposal.
### 3.9 Summary of phase one findings

Following the community scoping work undertaken in phase one, the implications for social factors identified in the Scoping Report (Water Corporation, 2004) are summarised below.

<table>
<thead>
<tr>
<th>Social factors</th>
<th>Summary of existing environment in relation to factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lifestyle, amenity and recreational use and access</td>
<td>All communities included in scoping phase are concerned about potential changes to their enjoyment of the area as a result of the proposal. Concerns relate to potential changes to the environment which could change the way they could use the area, change the look of the area, change its intrinsic value, and change the attractiveness of the area both as a place to live and as a place to visit. These were perceptions of the effects that might result from the process. Whether these effects will eventuate will be determined as a result of the environmental studies and modelling.</td>
</tr>
<tr>
<td>Sense of place</td>
<td>As above.</td>
</tr>
<tr>
<td>Indigenous communities</td>
<td>The 2003 Cultural Values Study identified areas of significance to Indigenous people. Whether any heritage sites would be affected by the proposal will to be determined as a result of the environmental studies and modelling.</td>
</tr>
<tr>
<td>Existing and future needs</td>
<td>All communities are concerned about whether existing water users would be impacted by the proposal, with concerns centring on drawdown effects for those with bores, and impacts on agricultural sectors. They are also uniformly concerned about futures foregone – whether there would be enough water for the future needs of the region. They see that taking the water to Perth would deprive the region of water needed for future growth. This will only be answered by combining a good understanding about the extent of the Yarragadee resource and how it recharges with a good understanding of what the future needs of the region might be. The environmental studies and modelling together with the exploration of Reasonable regional needs will help to address this set of concerns.</td>
</tr>
<tr>
<td>Equitable access to water</td>
<td>These communities largely see the proposal as inequitable, where Perth and IWSS users would benefit and where the SW communities would suffer. This reflects concerns about inequity of current water supply to towns in the SW (distribution inequity) plus concerns about how the decisions will be made (process inequity) which create an adversarial position in relation to water sharing. The environmental studies and modelling will provide information about the size of the water source; together with exploration of reasonable regional needs.</td>
</tr>
<tr>
<td>Development footprint</td>
<td>Borefield and pipeline construction activity has not been the focus of the work done. However, communities will want to know the exact pipeline route, whether they are affected, and what management plans are in place to manage the impacts during the construction phase.</td>
</tr>
</tbody>
</table>
4. PHASE TWO: ASSESSING THE SOCIAL IMPACTS

4.1 Introduction

Social impacts are defined by the Interorganizational Committee on *Principles and Guidelines for Social Impact Assessment* as:

*The consequences to human populations of any public or private actions that alter the ways in which people live, work, play, relate to one another, organise to meet their needs and generally cope as members of society. The term also includes cultural impacts involving changes to the norms, values and beliefs that guide and rationalise their cognition of themselves and their society* (Burdge, 2004b, p. 3).

Recognising the importance of such changes, Social Impact Assessment (SIA) is defined as the systematic effort to identify, analyse and evaluate social impacts in advance in order that information obtained can influence the relevant decision making process (Burdge & Robertson, 1990; Burdge & Vancelay, 1995; Dale & Lane, 1994; Taylor, Bryan & Goodrich, 1990). The essence of SIA is to achieve better decisions in matters of public policy and public good by:

- understanding and seeking to resolve the distribution of costs and benefits of imposed changes;
- ensuring that the likely social outcomes of particular courses of action (for particular communities) are considered before decisions are finalised and during the implementation of change processes;
- providing communities in which social impacts are likely to be felt with the opportunity to participate in decision making - such people are in the best position to say how such events are experienced (Manidis Roberts, 1996).

An additional important role for SIA is to work with communities to develop mitigation strategies which act to ameliorate negative, and enhance positive, social and economic changes.

The aim of mitigation is to ensure that major developments can be implemented and responded to in such a way that a community’s social vitality, local economic viability and capacity to adapt to change are maintained (Bowles, 1981).

Capacity is an important factor influencing community responses to change. Communities with a lower capacity for change are those that are small, isolated, lack robust economic diversity, are dependent on a single industry and have limited (or fragmented) support networks. The resulting high levels of uncertainty may further constrain a community’s ability to adapt to change (Social Assessment Unit, 1998, p. 6). The capacity to competently deal with any impacts requires that community members are able to accommodate conflict and collaborate in identifying relevant problems and undertaking required action.
SIA generally holds that well functioning communities are intrinsically important because they ensure quality of life for their members. Additionally, a viable local economy is necessary for any adjustment of individuals and families in communities.

Within communities undergoing transition, water is one of the defining resources:
- Water affects what happens in communities and is affected by what happens;
- If communities have enough of it, their development is different to if they don’t have enough of it;
- Is the factor that defines change and future possibility;
- May be what moves communities from one transition phase to the next.

The social variables identified in phase one of this study can be integrated into three main variables which are discussed below. They are:

**Sense of place and social values** – related to extent of environmental impacts, whether those impacts will affect environmental amenity and hence sense of place, and if so, whether they can be managed

**Futures foregone** – related to water availability; how much is available, whether it can be sustainably taken, whether the communities who need it for growth have enough, and how much is enough

**Benefit and equity in terms of accessing water** – this is about local communities benefiting from the resource, the fairness of the allocation decisions, about reasonable access to water in the region, who gets the water, and whether those currently using water will experience a change

### 4.1.1 Key environmental and modelling data relevant to determining social impacts

As this phase progressed, work progressed also on a wide range of environmental studies and groundwater modelling. Those results were critical inputs to this SIA phase by helping to clarify:

- Areas of likely drawdown and extent of drawdown under a worst case scenario
- Extent of likely environmental impact under a worst case scenario
- Areas which appear unlikely to be affected.

The investigations led to an extensive understanding of the aquifer structure and its relationship with surface water features such as wetlands, state forest areas, coastal plains, and the Blackwood River and its tributaries. They also enabled the development of a sophisticated computer-based groundwater modelling program to help specialists understand the effects of abstracting 45 gigalitres of water annually from the aquifer.

Key findings relating to areas of potential drawdown effect are detailed below. It is important to this study to note that the area of drawdown effects has been clearly defined, and that many of the concerns of environmental impacts raised by communities during the scoping phase are not expected to be realised.
Interpreted, Water Corporation Eastern Split Borefields Drawdown (Layer 1, masked)
Impacts on the Blackwood River and tributaries, including the Poison Gully wetlands

There is some connection with the Yarragadee along a 15-kilometre section of the Blackwood River to the south west of Nannup. In this area the Yarragadee contributes a small baseflow to the Blackwood River and helps support the lower reaches of the two tributaries, Poison Gully and Milyeanup Brook. The studies concluded that the changes to baseflow into the Blackwood River would be negligible, would have no effect on the river, and that changes in the vegetation in the two tributaries would be gradual, confined to small areas and effectively unnoticeable.

The investigations therefore concluded that the Blackwood River would not be significantly affected (Water Corporation, 2005d and 2005f).

Impacts on the Reedia Wetlands

The investigations found that some important surface water features in the area, such as the Reedia Wetlands and the Blackwood River floodplain, do not have a strong interrelationship with the Yarragadee aquifer. This means that abstraction of water from the Yarragadee would have no effect on these important surface water features. The maps above show no drawdown effect in these areas.

Impacts on St John Brook, a tributary to the Blackwood

St John Brook, an ecologically important tributary that includes the popular Barrabup Pool recreation area, receives its baseflow from the Leederville and is effectively protected from drawdowns in the Yarragadee by a thick layer of impermeable clayey soils (Water Corporation, 2005b and 2005f).

Impacts on the eastern Scott Coastal Plain

The western area of the Scott Coastal Plain is not likely to be affected by the Yarragadee proposal, but some parts of the eastern area have a varied hydrogeology and a direct relationship with the Yarragadee. The eastern area also contains several important wetlands, including Lake Jasper and Lake Quitjup. The studies concluded that there is low potential for the eastern Scott Coastal Plain, its ecological values, and its developing agricultural industries to be significantly affected by the proposal because of the distance from the proposed borefield (Water Corporation, 2005c and 2005f).

Impacts on the eastern Swan Coastal Plain

Drawdown effects are expected to be minor and should be able to be accommodated by anyone effected (Water Corporation, 2005c).
4.2 Sense of place

The objective set by the Water Corporation in its Scoping Report for the Sense of Place factor was: “to determine whether community members with strong attachments to places and heritage values anticipate changes to those places and values as a result of the proposal, to ensure that negative outcomes do not occur from this project, and to explore potential positive outcomes” (Strategen, 2005a, p. 20). The intention was to identify places with social significance and evaluate potential impacts on those places.

An understanding of ‘sense of place’ is an important first step. It is an intensely personal response to the environment, both social and natural, which the individual experiences in daily life, and at a broader level it can be the individual’s perception of a whole region, state or nation.

Individuals might have more than one ‘sense of place’. They might include, for example, the sense of place relating to the urban environment in which they currently live; the emotional sense of place attached to where they spent their rural or urban childhood, and where their family has roots; the reactions they have to the natural areas in which they go bushwalking or see in documentaries; and the generalised perception they have of what sets their State apart from other States, and Australia apart from other countries (Lennon & Associates 2001).

There is an extensive ‘sense of place’ literature reflecting the many social sciences that have embraced the concept (e.g., psychology, sociology, geography, landscape architecture, anthropology, resource economics, etc). The following review focuses on the relationship between community attachment and the natural environment and the importance of the natural environment in constructing a sense of place (Stedman 2003). The relationship between sense of place and associated concepts including aesthetics, heritage, and culture are also briefly explored.

**Place Attachment and the Natural Environment**

With the emergence of ecosystem management as a resource management philosophy, more importance is being placed on understanding the subjective, emotional, and symbolic meanings associated with natural places and the personal attachments people form with specific places or landscapes (Williams & Stewart 1998).

What a particular place signifies may range from the very personal to the publicly shared. It may contribute to the formation of emotional bonds with that place. Similarly, emotional bonds may form with particular landscapes or places because their use has come to symbolise the user’s sense of identity. Such bonds intensify resource management conflicts as different segments of society assign different kinds and degrees of meaning to the same place (Williams & Vaske, 2003).

The field of environmental psychology views “place attachment” as a positive connection or bond between a person and a particular place. Early studies of place attachment were
directed at the built environment. Recent efforts have studied residents’ attachments to “special places” (Eisenhauer et al. 2000) and visitors’ attachments to recreation and tourist destinations (e.g., Moore & Graefe 1994, Bricker & Kerstetter 2000, Warzecha & Lime, 2001).

People form attachments that influence how individuals view various natural resource management issues (Watson et al. 1994, Vaske & Kobrin 2001, Vorkinn & Riese 2001, Cantrill 1998). These studies also confirm that attachment is strongly associated with familiarity and extent of contact with a place (Williams et al. 1992a).

“Natural landscapes, places, and spaces are more than containers of natural resources and staging areas for enjoyable activities. They are locations filled with history, memories, and emotional and symbolic meanings” (Williams & Vaske, 2003, p.838).

Some studies have found that place attachment is associated with higher sensitivity to resource impacts, more environmentally responsible behaviour (Vaske & Kobrin 2001), and a perceived lack of substitutes (Williams et al. 1992).

Studies of the relationship between environmental attitudes and community attachment to the local environment (Brehm et al. 2004, Vorkinn & Riese 2001) have found place attachment to be more influential in predicting attitudes of environmental concern than the more commonly studied socio-demographic variables (e.g. income, age, gender).

Eisenhauer et al. (2000) discuss the relationship between attachment to a ‘special place’ and sense of place. It is described as an ‘emotional attachment’, reflecting the value an individual has for a landscape. Strong emotional attachment results in heightened concern about the management of a location if it is perceived as a ‘special place’.

Williams et al. (1992) contend that a better understanding of ‘emotional attachment’ can help anticipate and explain public reactions to public policy decisions regarding natural resources. By gaining a better understanding of people’s emotional bonds with special places, land managers can anticipate and explain public reactions to land management actions affecting ‘special places’ (Eisenhauer et al 2000).

The 1998 Regional Forest Agreement process for the South West demonstrated how place attachment to an environmental setting viewed as a special place (SW old growth forests) can vary by community type. The social impact assessment conducted for the RFA reported that 80% of study respondents were concerned about the management of WA forests. However respondents who lived in urban centers such as Perth were more concerned than those living in rural parts of the South West. Although the urban dwellers were less likely to be directly impacted (positively or negatively) by changes in forest management, they demonstrated a strong attachment to the forests.
Cultural Landscapes and Sense of Place

There is increasing recognition of the need for cultural and natural elements to be considered together. Both elements are essential parts of the construction of cultural landscape. They are also key components of a sense of place. The concept of cultural landscapes integrates, for any one place, aspects of natural, Indigenous and historic, aesthetic, scientific and social heritage values (Lennon & Associates, 2001).

The U.S. National Park Service defines a cultural landscape as a geographic area, including both cultural and natural resources (including wildlife or domestic animals), associated with a historic event, activities, or person or exhibiting other cultural or aesthetic values.

Cultural landscapes need not be monumental or rare to be valuable, and can range from thousands of acres of rural land to homesteads with small front yards. They can be man-made expressions of visual and spatial relationships that include farmlands, public gardens and parks, college campuses, cemeteries, scenic highways, and industrial sites. They also exist in relationship to their ecological contexts.

Cultural landscapes are important because these special places reveal aspects of a region’s origins and development. Through their form, features, and the ways they are used, cultural landscapes reveal much about our evolving relationships with the natural world. Their preservation can “yield an improved quality of life for all, and, above all, a sense of place or identity for future generations” (Birnbaum 1994).

With its strong scenic, heritage and historic values, one could quite easily argue that the Blackwood River Valley is a valuable cultural landscape.

Heritage and Sense of Place

Natural and cultural heritage values are the qualities which make a specific and definable place or area important to a community. Heritage values of natural heritage places are often difficult to disentangle from wider biodiversity and other conservation issues. The important aspect that distinguishes these factors is that natural heritage places are related to definable and valued locations or areas of land. For example, the values of a particular national park can be identified and defined as heritage values.

Different people or communities might see different values in the same place. An example might be a hill where a rare plant species grows, that is significant to Indigenous people for spiritual association, was a lookout point for an early explorer, and is a popular bushwalking site for a local community. These values may be seen in a place's physical features, but can also be associated with intangible qualities such as people's associations with or feelings for a place (Lennon & Associates, 2001).

For Indigenous people their country is the landscape in which the ancestral and living beings have a spiritual and physical presence. Natural and cultural heritage is therefore
inextricably interconnected for many Indigenous people and they do not necessarily distinguish between the two.

Another crucial issue for Indigenous heritage is the fact that its control by the proper Indigenous custodians is essential for the continuing existence and significance of the heritage. Physical protection of Indigenous places, landscapes or objects in a reserve or a museum without active involvement and custodianship by representatives of the culture which created them, and without the web of meaning and context which only they can supply, does not constitute conservation in any meaningful sense (Lennon & Associates, 2001).

Tourism can have positive effects (may help conservation) or negative effects (lead to overuse and declining condition) on heritage values. For example, tourist pressure on a heritage resource leads to a deterioration of its condition, and in response new boardwalks are constructed (e.g. the tree top walk); this response in turn enables greater numbers of tourists to use the resource, which become a pressure again on the condition of the resource, and this may change its heritage associations and meanings for some people (Lennon & Associates, 2001).

Aesthetics, Property Values and Sense of Place

Scenic areas contribute to our sense of place, or sense of who we are, where we came from, and the values we hold. They can also bring other substantial benefits to communities including higher property values and increased tourism revenue.

Water in particular typically adds to the aesthetic appeal of an area. For residents and visitors, water features (e.g., rivers and lakes) can enhance the scenic appeal. Real estate agents and property buyers have long been aware of the “waterfront effect”; a home situated by a stream, lake or river costs more to buy or rent than a more distant one (Benson et al., 1998; Lansford & Jones, 1995).

The quantity and/or quality of available water can be an opportunity or a constraint on tourism and impact on aesthetic appeal. For example, construction of a dam and reservoir can create a tourism opportunity and may improve aesthetics. However if water levels are reduced below a certain threshold some tourism-related activities, especially recreation (e.g., water skiing, canoeing), may be constrained or lost. The aesthetic value of the reservoir is also diminished.

A sense of place can be changed, positively or negatively, by changing the visual character of the landscape, e.g., altering water levels.

Some Nannup residents refer to the Blackwood River as Nannup’s ‘coastline’. The ‘coastline’ is not only valued by local residents but is also a key draw card for tourists to the area, in part due to its aesthetic value.
**Sense of Place and Sustainable Communities**

In more recent times, the concept of sense of place has become embedded in both the Smart Growth and Sustainable Communities movements.

“A more sustainable community recognises and supports people’s evolving sense of well-being which includes a sense of belonging, a sense of place, a sense of self-worth, a sense of safety, a sense of connection with nature, and provision of goods and services which meet their needs, both as they define them and as can be accommodated within the ecological integrity of natural systems” (Kline, 1996).

**Impact of this proposal on sense of place**

One objective in impact assessment is to minimise or avoid changes that result in negative impact. Such adverse impacts include any modification in land forms, water bodies, or vegetation, or any introduction of structures, which negatively interrupts the visual character of the landscape (Bureau of Land Management n.d.).

Higher priority is given to protecting those areas with the most important scenic or aesthetic values. The scenic quality of a landscape is evaluated by examining seven factors: land form, vegetation, water, colour, adjacent scenery, scarcity, and cultural modifications (Bureau of Land Management n.d.).

As the discussion above shows, sense of place is tangible but personal in that each person with an attachment to a physical location may have a different rationale for that attachment. The Water Corporation’s proposal recognises that negative impact to these places will represent a social impact, and further, it undertakes to ensure that negative impacts do not occur.

Many of the place attachments from the scoping phase relate to the Blackwood River, and the extensive discussion of social values of the Blackwood in Section 3.6 clarifies further the specific reasons for this attachment. Much would be at stake if the Blackwood River was adversely affected by this proposal. However, the modelling shows that the Blackwood River would not be significantly affected, and social values of the Blackwood River will not be affected by the proposal. Tourism is therefore not expected to be impacted.

Table 21: Impact on social values of the Blackwood

<table>
<thead>
<tr>
<th>Social values/activities</th>
<th>Impact from proposal</th>
</tr>
</thead>
<tbody>
<tr>
<td>canoeing</td>
<td></td>
</tr>
<tr>
<td>Two canoe operators on the Blackwood, both operating year round; however, the winter rains, which increase the level and speed of the</td>
<td>The studies concluded that the changes to baseflow into the Blackwood River would be negligible, would have no effect on the river, and that changes in the vegetation in the two tributaries would be gradual, confined to small areas and effectively unnoticeable.</td>
</tr>
</tbody>
</table>
The extent of impacts is generally low, will not have an affect on recreational use of the Blackwood, or aquatic life in the Blackwood, or quality of the river itself. Given that people who use, visit or live alongside the Blackwood are unlikely to experience changes in their current relationship with the area, sense of place is unlikely to be impacted negatively by this proposal.

Table 22: Answering community concerns

<table>
<thead>
<tr>
<th>Community</th>
<th>Concerns</th>
<th>Level of impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Augusta</td>
<td>Environmental values – will this change the Blackwood? Will there be diminution of flows and water quality? Amenity values – what impact will this have on our attractiveness as a holiday/retirement destination, which is the basis for our continued growth?</td>
<td>Investigations concluded that the Blackwood River would not be significantly affected (Water Corporation, 2005d and 2005f).</td>
</tr>
<tr>
<td>Bunbury</td>
<td>Environmental impacts – what will the environmental impacts be?</td>
<td>No drawdown effects or environmental impacts in Bunbury. Very defined area of potential impacts on east Swan Coastal Plain. Investigations concluded that the Blackwood River would not be significantly affected (Water Corporation, 2005e and 2005e).</td>
</tr>
<tr>
<td>Busselton</td>
<td>Amenity values – what impact will this have on our attractiveness as a seachange destination, which is the basis</td>
<td>No drawdown effects or environmental impacts in Busselton. Very defined area</td>
</tr>
</tbody>
</table>
for our continued growth?

**Environmental impacts** – what will the environmental impacts be?

of potential impacts on east Swan Coastal Plain. Investigations concluded that the Blackwood River would not be significantly affected (Water Corporation, 2005d and 2005f). The Vasse Wonnerup Wetlands will not be affected by the Yarragadee proposal because they are connected to the ocean rather than the Yarragadee. The balance in water levels are controlled by the ocean level rather than groundwater from the Yarragadee.

| Margaret River | **Environmental impacts** – what will the environmental impacts be, particularly on Margaret River? What will the impacts be in the context of climatic change? | No drawdown effects or environmental impacts in Margaret River township or on Margaret River. Investigations concluded that the Blackwood River would not be significantly affected (Water Corporation, 2005d and 2005f). |
| Nannup | **Environmental impacts** – what will the environmental impacts be on the Blackwood River? Will the Blackwood change? If so, will that reduction in amenity mean that people won’t visit the area? Will this impact on tourism numbers affect our viability as a community, given that we rely strongly on tourism? | Investigations concluded that the Blackwood River would not be significantly affected (Water Corporation, 2005d and 2005f), and therefore no impact on tourism in the area. St Jon Brook would also not be expected to be affected (Water Corporation, 2005b and 2005f). |

### 4.3 Futures foregone

One of the major concerns of all five SW communities is the perception that “if the water gets removed from the SW there will not be enough water for growth in the SW and future opportunities for growth will be lost”. This is a concern about water availability and access, and future economic opportunity, and respondents in phase one discussions reflected a worst case scenario with impacts on:

- Growth
- Future viability of each community
- Sense of community/sense of place.

An analysis of different future scenarios asks: What will change in each community if the project proceeds or doesn’t proceed? Is current water availability a constraining factor?
Is the proposal likely to make water a constraining factor for communities into the future?

4.3.1 Augusta

Located at the mouth of the Blackwood River, the Augusta community is focused on the future economic viability of town and making businesses more viable, seeing a need to create more jobs. The community sees eco-tourism as an area of opportunity (SIA phase one research), with a focus on river-based activities for tourism and recreation. These activities include water skiing, eco-cruises, whale-watching, fishing, yachting, and bush activities including bushwalking, camping and picnicking. As detailed above in relation to sense of place, investigations have concluded that effects to the Blackwood River are unlikely to be significant. This translates into an assessment of no change for Augusta.

However given the significance of any change to the Blackwood, it is recommended that good monitoring regimes be established to ensure that any changes are quickly identified and managed.

In relation to water availability, the town’s water supply comes from two sources: Leeuwin Spring, located at Cape Leeuwin, near the Lighthouse; and Lesueur Formation – groundwater extracted from a deep bore into the Leederville aquifer and treated in the Fisher Road area north east of the town. If more water is needed, the pipeline could be extended from the Fisher Road bore to provide additional water. Therefore water availability is not deemed to be a limiting factor in the community’s development now or into the future.

Conclusion on futures foregone

Augusta is unlikely to experience an impact – positive or negative – from the Yarragadee proposal.

4.3.2 Bunbury

The City of Bunbury has a population of 30,000, however the Greater Bunbury urban area encompassing the core residential areas of neighbouring shires, claims a population of 50,000. The current population of over 50,000 expected to rise to over 130,000 by 2030 (SIA phase one research).

Bunbury is driven by a diverse economy. Significant employment sectors include retail, manufacturing, construction, health and community services, property and business. The wealth of the region is driven by the resource sector, traditionally mining, agriculture and forestry, and the port activity these sectors generate. Knowledge industries are on the rise in Bunbury and have the potential to be an important economic driver in the future. The tourism industry in Bunbury is also growing as its recognition as a short break destination increases (City of Bunbury, 2005, p. 11).
Appreciation for environmental amenity is important in Bunbury. It is a city bounded by water on three sides, and people enjoy this location. However the economy is not based on the environment, and the environment around Bunbury would not be affected by proposed extraction from the Yarragadee.

City of Bunbury water comes from the Yarragadee and is supplied by AqWest under its licensed allocation. Outer communities are supplied by Water Corp from Yarragadee and Leederville. Availability and quality of water are not an issue in city water supplies, but availability is an issue at the Kemerton Industrial Estate, with lack of water an inhibiting factor to future expansion of the industrial estate. Kemerton needs a foundation customer to justify the expense of putting in water. The AqWest boundaries limit its supply to town areas.

While Bunbury can access sufficient water supplies through its bores, there may be future impacts. From an interpretation of modelled changes in groundwater outflows, the seawater interface is expected to move inland by up to 400 m in the Bunbury area in response to both regional and Water Corporation pumping. This movement is expected to be extremely slow and the full movement is likely to occur some considerable time beyond 2033 and will allow considerable time to plan any required modifications to existing wells with potential to be affected (Water Corporation, 2005e).

Conclusion on futures foregone

The community would experience benefits from the proposal as a result of the opportunity for improved access to water, particularly at Kemerton which would be able to tap into the pipeline from the Yarragadee. In the long-term the project would offer potential for Bunbury to tap in and get the benefits of increased water availability. Also high-value development projects would have an available water supply.

The community would be unlikely to experience negative social impacts from the proposal.

4.3.3 Busselton

Busselton is a community that is growing quickly and which is focused on managing the influx of people and consequent development within the profile of the quiet seaside town. It has low sensitivity to change due to its size, proximity to Bunbury, rapidly increasing population, high occupancy rates and growing economic base. Its water supply is not contingent on the Yarragadee proposal and it is unlikely to be affected by this proposal. Community concern on this issue mainly relates to whether the Shire will have continued access to large amounts of water to service its growth, plus concerns about the environmental impacts.

In 2001, Busselton had a population of 22,060 people, an increase of 28.5% during the inter-censal period (Shire of Busselton, 2004). The town of Busselton is one of the fastest growing country towns that are not regional centres, and the Shire is the sixth fastest
growing rural Shire in Australia (Shire of Busselton, 2004). Being adjacent to the Shire of Augusta-Margaret River, it services people from the Augusta-Margaret River Shire for services not found within their own Shire. Population swells to approximately 60,000 during the peak holiday times.

The Shire’s population structure reflects a broadening of the area’s economy and increasing employment opportunities with a corresponding reduction in the significance of the area’s ‘retirement’ function.

Busselton’s water is drawn from the Yarragadee and supplied by the Busselton Water Board under its licensed allocation. It is allocated for 18 GL/yr, and currently uses 3.6 GL/yr. Availability and quality are not issues. Even with the strong growth rates quoted by the Shire, water is unlikely to be an issue or limiting factor to development because of extensive availability through the Busselton Water Board.

Conclusion on futures foregone

Water availability is not an issue, now or into the future given current population estimates. In the long-term, access to the integrated scheme to meet future needs may be a possibility.

4.3.4 Margaret River

Margaret River’s growth statistics predict continued strong growth, with economic growth coming primarily from viticulture and viticulture-based tourism. Farmers in the area have a number of current issues with water. The area relies purely on surface water as it has no underlying aquifer. Over the years, farmers have captured the surface water by damming streams on their properties, which has led to environmental damage to the streams. They are now facing increased controls from the WRC and the Shire who have proclaimed the area, prohibiting farmers from building dams without approval.

Limitations to water supply for farmers already exist. Water for new developments and vineyards is limited because of the restrictions on dams. A proposal has been mooted to build a pipeline to provide a reticulated irrigated supply from the Leseuer Sandstone groundwater further to the east. A solution is needed quickly to keep growing the industry.

Current town water supply from the Ten Mile Brook Dam is seen as sufficient for those communities it currently supplies. Water is captured from Ten Mile Brook and augmented with water pumped up from the Margaret River. The dam supplies water to the Margaret River township, Prevelly, Gnarabup and Cowaramup. There may be water quality issues associated with continuing to use water from the Margaret River as there is agricultural activity within the catchment. Witchcliffe and Gracetown are not connected to a reticulated water supply scheme. The availability of domestic potable water is a constraint on local development, especially in Witchcliffe.
Environmental amenity in strong in this community because of its location among State forests, proximity to Margaret River and Blackwood River, and tourist attractions such as the Mammoth and Jewel Caves. Environmental concerns relate to sustainability of the aquifer given the climate change conditions, impacts on Margaret River, and impacts on the Blackwood River. The community believes that environmental amenity is a major reason for people visiting the area.

Conclusion on futures foregone

The Margaret River township does not draw on Yarragadee groundwater currently, and its agricultural industries, including viticulture use surface water rather than groundwater. The Margaret River will not be affected (see Report X), as all modelled drawdown effects are in specific locations further to the east. Further, surface water in the area is not linked to the Yarragadee (see Report X), and therefore is independent of any pumping from the Yarragadee.

However, water availability is an issue in the community. Access to the integrated scheme could provide some future benefit to Margaret River in terms of water availability to the towns. However as a timeline has yet to be set for this, the future benefit may be some years away. Farmers would still rely on surface water and bores, and are likely to be unaffected by proposal.

4.3.5 Nannup

Nannup is a slowly growing community, but with steady growth envisaged, the current water source (Tanjannerup Dam) and dam capacity are being reviewed by the Water Corporation. There are many options available. The town is fed from the dam, which has sufficient capacity to support several subdivisions, and the water quality is good. People in semi-rural subdivisions supplement their water supply with bores and rainwater tanks.

Scott Coastal Plain farmers use bores and surface water, and orchardists to the north and east of Nannup use surface water. The Scott Coastal Plain farmers have access to abundant surface water during the winter months. A number of farmers would like to increase their allocations during summer so they can expand their businesses. They have concerns related to water allocations, specifically the amount of time the process is taking at the moment to deliver a decision on allocations, and the requirement to demonstrate extent of environmental impact of the additional allocations. While the Water Corporation’s proposal has been blamed by farmers as the reason for the delay in current allocation decisions, the allocation decision rests with WRC. Farmers feel if they can get water allocations, they’ll continue to grow their businesses, employ more people and build sense of community. Therefore water availability is an issue for Scott Coastal Plain farmers. They equate limited future access to water as a constraint on their businesses.

Environmental amenity is important in this community, and is based on social values of the Blackwood River. Some Nannup residents refer to the Blackwood River as Nannup’s
‘coastline’. The ‘coastline’ is not only valued by local residents but is also a key draw card for tourists to the area, in part due to its aesthetic value.

Discussion on futures foregone

The proposal will not provide direct benefits to the community in terms of better water or water availability as the Yarragadee water abstracted by the Water Corporation is not destined for use in Nannup.

Four potential impacts to Nannup need to be examined:
1. The potential for changes to the Blackwood River and its tributaries to have an impact on tourism, and tourism income to the Nannup Shire
2. The potential for changes to the Blackwood River and its tributaries to have cultural impacts in areas valued by Indigenous people
3. The potential for environmental impacts on the Scott Coastal Plain to farmers in that area
4. The potential for a social impact on Nannup Shire of any change to the agricultural base of the community as a result of the proposal.

Potential impact on tourism

Tourism is not expected to be impacted (see section on sense of place).

Potential impact on cultural values

The 2003 South West Yarragadee – Blackwood Groundwater Aboriginal Cultural Values Study (Goode) identified the Blackwood River as having mythological significance.

Barrabup Pool had mythological significance, and St John Brook was important because it was used as a travel route along the Blackwood River. St John Brook is a perennial tributary of the Blackwood River, and contains several interconnected permanent pools including Barrabup Pool and Workmans Pool.

St John Brook receives its baseflow from the Leederville and is effectively protected from drawdowns in the Yarragadee by a thick layer of impermeable clayey soils (Water Corporation, 2005b and 2005f). If a drawdown effect occurs however, the flow can be readily supplemented from a production well just north of Barrabup Pool (Water Corporation, 2005b) if needed.

While it would appear that these culturally significant areas will incur minor ecological impact, the modelling results will be discussed further with Indigenous people in the area to fully understand these implications. This will be reported separately.
Potential impact on Scott Coastal Plain farmers

The Scott Coastal Plain area is the primary area of potential competition between the Water Corporation proposal and agricultural use. Large-scale dairy enterprises have recently become established in this area based on reasonably priced land with access to groundwater for pasture irrigation. Licensed allocations in this area total 8.2 GL/yr. For farmers who plan to continue to run their business with current water supplies, the proposal will have a minor effect on drawdown which is an incremental effect on top of drawdown effects already being experienced in the area.

However farmers who want to grow their business and who need access to additional water to do that, will find that availability of water will become a constraint. This is primarily because of the environmental impacts of extracting more water from the area, rather than as a consequence of the Yarragadee proposal. For this reason, if the proposal did not proceed, this would not automatically increase availability to the Scott Coastal Plain by the same amount. It is only likely to allow several additional GL/yr to be made available for agriculture to avoid further drawdown effects.

If the proposal did proceed, it would incrementally reduce the amount of water available to Scott Coastal Plain farmers.

Potential impact on Nannup Shire

One aspect raised by respondents during the SW Yarragadee SIA is the implications for the Shire of Nannup if any Scott Coastal Plain farmer chose to leave the area or sell out to blue gums as a partial consequence of water constraints to future development of their agricultural operations. Some argued that the loss of farming households from the Scott Coastal Plain would further damage the economic and social well-being of a Shire (i.e., Nannup) already hard hit by the effects of the Regional Forest Agreement (RFA).

This analysis examines the social and economic vitality of the town and shire of Nannup to aid in evaluating such a scenario.

Until the late 1990s the timber industry dominated the economy of both the town and shire of Nannup. Nannup has been a timber mill town since 1926. Through the 1980s and 90s the mill was operated by industry giant Bunnings (Wesfarmers) and was the major employer in the town.

The RFA process of the late 1990s cast a cloud of economic gloom over the timber-dependent towns of the South-West including Nannup. Under the RFA (South-West Forests) signed in 1999, the annual amount of jarrah and karri sawlogs available to the timber industry would be drastically reduced starting in 2003. This meant a significant structural readjustment for the South West and the timber towns in particular.

As part of the RFA, a $41.5 million timber industry development package was created by government to assist the timber companies and timber-dependent communities (e.g.,
Nannup) mitigate economic and social impacts. The industry was directed to refocus toward value-adding and downstream processing. Timber mill communities were encouraged to further tourism in their areas.

A contract for an annual volume of 20,000 m³ of jarrah sawlogs was specifically allocated to the Nannup facility. The Nannup timber mill was sold to Nannup Timber Processing Pty Ltd (M&B Sales) in 2001. The mill has since been upgraded with the addition of a value adding processing facility.

At the time of the RFA process, a social impact assessment was conducted to evaluate and predict what impact the RFA would have on the region and timber-dependent communities in particular.

**RFA SIA Predictions**

The Social Assessment Unit (SAU) (1998) identified that the town site of Nannup was highly sensitive to change, possibly the most sensitive in the RFA region. Agriculture and tourism were identified as important industries in Nannup, however, Nannup “would [still] encounter major difficulties sustaining the loss or significant downturn of a main industry” (i.e., timber) (Social Assessment Unit, 1998, pg 85).

This anticipated downturn was in part due to the community’s dependency on the timber industry for jobs. In addition to job dependency, a number of other characteristics were identified as working against the future sustainability of Nannup. These included: “marginal growth, high unemployment … and a small labour pool” (Social Assessment Unit, 1998, pg 85).

The SAU predicted that the RFA would impact both individuals and the community as a whole. Not only would rising unemployment impact the community but so would the resulting flow-on effects. For example, a reduction in job opportunities (individual impact) may result in families leaving Nannup to find work elsewhere; resulting in fewer students in a school (community wide impact) at the time of the RFA was struggling to maintain numbers.

**Concept of Community Vitality**

All communities change over time. However, some communities seem better able to cope with changing circumstances than others. What allows one community to not just survive but thrive in the face of stresses while others slowly decline? The term ‘community vitality’ has been used to refer to the collective capacity of communities to respond to change, especially economic change. Related terms include ‘resilience,’ ‘sustainability,’ ‘adaptability’ and ‘healthy communities’.

Researchers have explored the characteristics and conditions that may enhance a community’s ability to respond to changing conditions. These include development of human capital (workforce skill development, leadership, decision making capacity,
entrepreneurship), physical capital (health care, education and information technology infrastructure, affordable housing), social capital (capacity to 'network,' establish partnerships both within and outside of the community), and natural capital (sustainable, diverse and economically viable use and development of agricultural and natural resources) (Grigsby, 2001). Community self-awareness and responsibility in enhancing its capacity for collective action is also important. Diversity is another defining characteristic as it enhances adaptability. For instance, a locally diverse agricultural sector is less susceptible to fluctuations in commodity markets.

A focus of the community vitality literature has been on single-industry and natural resource-dependent communities (e.g., Randall & Ironside, 1996; Fenton & Marshall, 2001). Resource dependency indicates a relationship between social and resource systems, such that, maintenance of the social systems is reliant on the resource system. There have been a number of studies on timber-dependent communities (e.g., Coakes, Fenton & Gabriel, 1999; Cramer et al., 1993; Machlis & Force, 1988).

Social Indicators

Fortunately, at least to date, the predictions of the Social Assessment Unit (1998) have not materialised. This result can be explained by three aspects of the concept of community vitality: human capital, natural capital, and physical capital.

*Human (Social) Capital*

In 1997, the Shire of Nannup underwent a socio-economic planning process. It was decided at that time to diversify the economy of Nannup. This was in the face of discussions of the potential RFA, which it was anticipated would result in the loss of timber-related jobs in the town.

The DPI's Warren-Blackwood Rural Strategy (2004) supports this decision to diversify. Diversification was needed due the fact that the expansion of plantation forestry and the horticultural industry could only partially off-set the proposed job losses.

The decision to diversify led to the development (or further development) of the tourism industry (*decision making*). The community used their *entrepreneurial skills* and began to develop a tourism industry.

One result of this decision has been the increase of tourism jobs in the area. The Nannup Shire has the highest percentage of people employed in tourism in the south west region (10.2%); this is more than the 6.4% employed in the Augusta-Margaret River Shire (Tourism Western Australia, 2004b). This indicates a considerable amount of growth when compared to the 5.5% employed in tourism prior to the RFA (Social Assessment Unit, 1998).
To build on the success of the first planning process, a second planning day was undertaken in February 2005 (decision making). The day was conducted to continue to implement change in a positive way.

**Natural Capital**

In the initial stages the community relied heavily on natural capital to develop tourism in the 1980s and 1990s. The Blackwood River (natural resource) was one of the primary draw cards. A number of active and passive forms of recreation were developed (or further developed) on the Blackwood River including canoeing, dinghy racing, bushwalking, swimming, bird watching, wild flower viewing and fishing (See Section 3.6 of this report).

Another aspect of Nannup that displays both its human (entrepreneurship) and natural (flora) capital has been the ‘branding’ of the town as the “The Garden Village”. This has led to the development of a series of festivals revolving around flowers found and/or grown in the area (e.g, the Rose Festival).

**Physical Capital**

The initial planning day in 1997 resulted in tourism developments that utilised the natural capital of the area; these developments include the addition of a number of bed & breakfasts and cottages in Nannup and its surrounds.

The area has continued to develop its physical capital to complement the existing natural capital. This continued growth in tourism is planned via two ideas, both to develop tourism ‘icons’. The first plan seeks to develop a town clock tower. A wood worker in the town has built the largest wooden clock in the southern hemisphere. The plan is to build a tower for the clock to sit on; the new tower and accompanying building will provide the opportunity to co-locate a number of businesses, including the Visitor’s Centre and the Telecentre.

The second opportunity to increase tourism is through the development of a forest slide at One Tree Bridge which crosses the Donnelly River west of Manjimup and is a joint venture between the Shires of Nannup, Manjimup and Bridgetown. The proposed development is based on the slide at Dismal Swamp near Smithton, Tasmania. The slide at Dismal Swamp enables tourists to literally slide through the forest canopy riding over the karst system of the swamp area. The Tasmanian slide is 110-metres in length and enables riders to reach speeds of 45 km/hr (Forestry Tasmania 2004). The One Tree Bridge slide is in the approval process at the moment.

The second planning day held in February 2005 produced a number of outcomes, including continued support for the development of a clock tower. Tourism was a key agenda item for the day; at the close of the discussions tourism – its development (including tourism icons) and marketing, was identified as the number one priority for the Shire.
In conclusion

To date many of the predictions for the community following the RFA have not been seen. In part this may be due to a lag effect with some of the predicted changes not appearing until the next census. However it appears more likely that the community has proved to be more resilient than predicted. This may be partially attributed to the RFA SIA itself, which pointed out the need for actions to be taken to buffer the changes of the RFA on the community.

According to the ABS 2001 census data the population of Nannup increased in the 1996-2001 period by 4.6% (refer to tables in section 2.1). Although growing, the growth rate is considerably below that of other areas of the region including the Shire of Augusta-Margaret River, Bunbury and the Shire of Busselton.

In terms of employment, Nannup has seen a decrease in the unemployment rate (8.5% in 2001). However, the unemployment rate is still higher than the unemployment rate of the State (7.5% in 2001). There has also been a slight increase in the percentage of population in the labour force (47.8% in 2001).

Nannup’s median weekly individual income is substantially lower than the Shire of Augusta-Margaret River, Shire of Busselton, Bunbury and the State (refer to the tables in Key Variables). The increasing number of jobs in tourism is unlikely to close this gap.

Overall Nannup appears to have overcome the changes inflicted on the community as a result of the RFA. Given that the Yarragadee proposal is envisaged to have a much lower, indirect impact, the Nannup community is unlikely to be negatively affected by this proposal.

Conclusion on futures foregone

Early in the evaluation process, the issues of futures foregone and maintaining water in the south west to satisfy regional needs were raised by the south west communities. The Water Corporation acknowledged these concerns, accepted the importance of both, and reformulated the ways in which reasonable regional needs could be met through this proposal.

Two mechanisms were proposed: an extension of the IWSS south of Harvey to ensure that water could be supplied to the region when needed (Water Corporation, 2005f); and a process proposed for ongoing dialogue with the south west about reasonable regional needs to discuss sharing of the resource in the future (Strategen, 2005b).

With these refinements added into the proposal, the social impacts from this proposal are both positive and negative. The positive impacts relate to the increased access to water in the south west afforded by an extended IWSS (eg., the Kemerton Industrial Estate in the short term, and the Busselton and Margaret River communities in the medium to longer
term), the protection to local south west use afforded by the principles of Reasonable Regional Need, and the ability to maintain current water restrictions for IWSS users in the face of potentially more severe restrictions.

The Augusta community is unlikely to be affected by this proposal. Tourism and recreation use of the Blackwood is unlikely to be affected by the proposal and therefore no direct impact on Nannup or Augusta is expected.

Negative social impacts may occur for Scott Coastal Plain farmers where the incremental constraint on water use presented by this proposal may have an impact on future development capability for their business. This would be an individual-level impact, the extent of which is hard to determine. It is difficult to determine for example whether the combined effects of additional drawdown impacts presented by the proposal together with impacts resulting from current land use management practices would lead individual farmers to change land use in the area. Would the combined effects lead them to choose to lease land to blue gums, and if so, what percentage of their land might be involved?

The Yarragadee proposal is only one part of the picture, but it is acknowledged that it adds an additional complication to landholders in the area.

If land use changes happened, there may be a small economic flow-on effect to the Shire of Nannup. However, given the Shire’s track record in weathering the much larger implications of the Regional Forest Agreement, the scale of potential impact in this case is expected to be small.

At the same time, there would be a benefit to Scott Coastal Plain farmers in terms of the availability of good information about the hydrogeology of the Scott Coastal Plain, which could assist them in future land use management decisions.

The benefits of better water availability are shown on the table below.

### Table 23: Futures foregone summary table

<table>
<thead>
<tr>
<th>Community</th>
<th>Positive</th>
<th>Neutral</th>
<th>Negative</th>
<th>Net outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Augusta</td>
<td></td>
<td>Water availability is not an issue, now or into the future. Water quality issues would continue to exist, with or without the proposal. Impacts on Blackwood are not modelled to occur but would have major impact, therefore needs to be monitored.</td>
<td>Neutral – unlikely to experience an impact positive or negative from this proposal</td>
<td></td>
</tr>
<tr>
<td>Bunbury</td>
<td>Better water supply to industrial areas</td>
<td></td>
<td>Neutral – unlikely to experience an impact positive or negative from this proposal</td>
<td></td>
</tr>
</tbody>
</table>

Positive
through extension of IWSS would allow growth. Regional communities which Bunbury relies on would benefit through improved access.

<table>
<thead>
<tr>
<th>Busselton</th>
<th>Potential benefit of access to the integrated scheme to meet future needs.</th>
<th>Water availability is not an issue, now or into the future.</th>
<th>Positive - neutral</th>
</tr>
</thead>
<tbody>
<tr>
<td>Margaret River</td>
<td>Potential benefit of access to extended IWSS in future to meet future growth and development.</td>
<td>Water availability for farmers is an issue because of diminishing surface water sources and controls on dams. This proposal will not have an effect on water availability for farmers.</td>
<td>Positive - neutral</td>
</tr>
<tr>
<td>Nannup</td>
<td>Good information for benefit of Scott Coastal Plain farmers in their land use management.</td>
<td>No impacts on Blackwood River social values, or tourism and recreation, or directly on the Nannup Shire.</td>
<td>Incremental constraints to water availability for Scott Coastal Plain farmers. Potential indirect flow-on effect to Nannup Shire from potential changes to land use on Scott Coastal Plain. Extent of impact expected to be small.</td>
</tr>
</tbody>
</table>

### 4.4 Benefit and equity in terms of accessing water

All five SW communities studied communicated a strong perception that the people in Perth would benefit from the proposal but at their local community level there would be little or no benefit. Those with a regional perspective saw that the region as a whole could benefit from greater availability of water, but themes from those with a local perspective included:

- *This is our resource – you’re taking it away and we get nothing*
- *Any future benefit that we might derive from the use of the resource is being denied by taking the water away.*

Strongly linked with this is the perception that the proposal is inequitable. According to the themes that came through the research, this means:
• It’s unfair to take a resource from one region that needs it to fill the same use in another region
  o Wouldn’t want our growth stymied because water’s been committed to Perth.

• It’s unfair to take a resource from one region to its detriment, for the benefit of another region.
  o Taking water to Perth increases your values, decreases our values.

• It’s unfair to take a resource from a region when towns within the region have insufficient or sub-standard access to that resource
  o Pumping good water to Perth when we’ve got water problems is not equitable. There are water restrictions here, yet you’re taking our water to Perth. Will Bridgetown and Manjimup be satisfied? If taking water leads to further restrictions on allocations, adds to the resentment.

• It’s unfair to take a resource from one region for the benefit of another region, when that other region is going to waste the resource.
  o Perth people are inefficient with water and it is resented.

The perception of inequity has been heightened also by the framing of water access as a competitive issue. Those who see it this way see it as an either/or situation:
  o Farmers worry that if Water Corp gets it, they won’t get it. Us or them. If shown there was enough it might make a difference, but people would be cynical.

Further, the SW communities feel powerless to influence what they see happening.

This is both a water supply and a water allocation issue. Water allocation decisions are made by the WRC and are outside the control of the Water Corporation. Supply infrastructure is the province of the Water Corporation which means that it is in the Water Corporation’s power to fix the issues of insufficient or sub-standard access to water within the region. It is also the Water Corporation’s responsibility to educate consumers – domestic, commercial and industrial -- to use water more efficiently.

In view of the community’s strong perception of lack of equity in the proposal, together with recommendations from the economic study undertaken by ECS (2005), the proposal has evolved in an effort to resolve these concerns. The amended proposal incorporates the concept of an extended IWSS which extends further into the south west providing opportunities for greater access by country communities.

The amended proposal has also been informed by significant levels of community discussions about “reasonable regional needs”. The State Water Strategy states that: “… all reasonable regional needs including social, recreational and projected future development will be satisfied before transfers can take place. To achieve this requires consultation to ensure that needs are understood and reasonably addressed.” (Government of Western Australia, 2003).
Defining Reasonable Regional Needs (RRN) is important to defining how the resource should be shared. This is a central concept to the proposal, and central to the way people respond to the proposal. It is at the heart of people’s concerns about equity and about whether this proposal is fair or unfair.
**Exploring issues of equity**

Both nationally and internationally, the issue of water allocations has become a controversial topic, partly due to an emerging scarcity of water, and partly due to the justice inherent in such decisions. Scarcity of water makes it a competitive issue because urban, regional, irrigation, recreational, environmental and industrial uses of water are competing for their share of water.

Definitions of equity and fairness are worth exploring as a basis for assessing the Water Corporation’s proposal. Syme et al. (1999) define fairness in these terms:

*Procedural justice* – is the process of decision-making fair?

*Distributive justice* – is the outcome just in terms of distribution of the resource between stakeholders?

Further, Syme et al. (1999) suggest that people apply different framing to their perceptions of fairness according to whether one is considering the acceptability of the decision in general or disinterested terms – *universal fairness* – or specifically where the outcome is likely to impact personally or locally – *situational fairness*.

The universal fairness principles developed and tested through a series of studies by Syme et al. (1999) included:

- All sections of the community have a right to have a say on water allocation
- The natural environment has the same rights to water as people have
- If the decision making process is fair, people should accept the final allocation decisions
- There are no general rules about how to share water, it depends on the situation
- You can’t really solve water sharing problems by analysing the costs and benefits in dollars.

Their conclusion was that the procedural fairness in terms of fairness of decision-making was of prime importance. People are concerned about the prospect of self-interest dominating the decision-making process, and believe that government can maximise the public good by encouraging efficient water use and avoiding the impression of “playing favourites”.

The Scoping Report acknowledges the need for equity in the factor ‘Equitable access to water’, with the stated objective that: “The Water Corporation will ensure that the water from the proposal is shared and available to the South West and IWSS regions” (Strategen, 2005a, p. 19).

Two aspects to emerge during the sustainability evaluation that resolve the issues of equity and benefit are:

- Definition and clarification of Reasonable Regional Needs (RRN)
- Proposed extension of the existing IWSS from Harvey to the proposed treatment plant on the Whicher Scarp
Reasonable Regional Needs

From identification and review of the issues, and with input from the community, the Water Corporation has determined that the following basic principles should be applied to considerations of how reasonable regional needs should be addressed. These principles come from the reasonable regional needs position paper produced by the Water Corporation (Strategen, 2005b):

- Water is a State resource available for the maximum benefit of all Western Australians.
- Western Australians needs reliable access to water.
- Water must be permitted to be transferred between regions
- Current use and users should be protected.
- Consultation should be undertaken to ensure regional needs are understood and reasonable addressed.
- Decision-making on water allocation should consider the values and priorities of the regional community.
- It is unreasonable to transfer water and leave a region deficient in water for any use that is of similar or higher social and economic value.
- Risks, and the mechanisms to manage those risks, must be clearly stated and understood.
- Known benefits should not be foregone to preserve uncertain future benefits.
- To maximise the benefits, water should be used efficiently.

Current understanding of the size of the Yarragadee resource shows that water availability is expected to exceed demand by a significant margin, and that the aquifer is expected to be significantly underutilised in the short to medium term. Further, it is a sustainable resource that replenishes itself annually (Water Corporation, 2005e and 2005f) which suggests that there is therefore considerable opportunity for additional water to be made available. The Water Corporation, abiding by the State Water Strategy’s requirement that reasonable regional needs be satisfied before water is taken from the region, will therefore be following equitable principles as it pursues this supply.

Extension of the existing IWSS

The issue of benefit for the south west is part of the proposal to extend the existing IWSS from Harvey to the proposed treatment plant on the Whicher Scarp. A transfer main along the Swan Coastal Plain would pass near the growing regional centres of Bunbury, Capel and the Kemerton Industrial Park. The thinking behind the proposed extension of the IWSS is that an integrated and expanded system such as this provides the greatest opportunity for economic benefits to both the region and the State. “An enhanced water supply will support expansion of the population and a higher overall level of economic activity in the South West” (Strategen, 2005b).

As discussed in Section 4.3 “Futures Foregone”, Bunbury would benefit initially through increased availability of water, particularly to the Kemerton Industrial Estate. Busselton,
Margaret River and Augusta could benefit into the future. The position paper states: “It is reasonable to assume that as demand increases in the South West from industries that can afford full priced water, the Water Corporation will supply the demand with the easiest, cheapest source which is likely to be the SW Yarragadee pipeline already transporting water through the area” (Strategen, 2005b, p. 5).

The community fears about “losing their water” and having their water “taken away without receiving anything in return” are easy to understand. Equity and benefit in terms of water access are being addressed with these two aspects. South west communities will have their needs accommodated; they will have their concerns addressed; they will have their current use protected; and they will be part of a dialogue in relation to reasonable regional needs which will monitor changing demand and make adjustments to allocations accordingly.

The ARCWIS (2003) study found that the triggers that worked to reverse people’s lack of support were the inclusion of local people in managing and monitoring the aquifer, being sure there was enough groundwater for the region’s future needs, and knowing that the decision could be reversed if shown to be detrimental to the region -- issues associated with certainty and process that most affected people’s decision making. The Water Corporation’s willingness to accommodate reasonable regional needs is certainly starting to address the concerns stated by the community in that original study.

There were a number of comments made during phase one relating to the desire for the Water Corporation to give something back to the communities in the south west in return for “taking the water”. Given that equity and benefit will be addressed through the two measures discussed above, any additional returns to the south west could be considered as an enhancement strategy. This is discussed in section 5 of this report.

One of the key factors which influences perceptions of equity and benefit is the stated lack of trust of Water Corporation, highlighted during the phase one research. Elements in the ongoing management and mitigation which would assist in building trust include:

a) An agreement about how the water would be shared and how to jointly resolve shared access if water availability changed, as shown by these comments
b) Transparency of monitoring
c) Independent involvement
d) Local representation
e) An agreement about process if the monitoring shows there’s a problem

4.5 The Perth view

Perth residents are seen by the south west communities as the recipients and beneficiaries of the Yarragadee water. The Perth community therefore has a stake in this proposal, and their views on water supply management in general and the Yarragadee proposal specifically have been sought at different stages.
The first taste of community sentiment about the Yarragadee proposal was revealed in the Social Values Survey (ARCWIS, 2003). While it found a higher level of support for the proposal than existed at that time in the south west (12%), the support level was still relatively low at 30.4%. Those unsure were 20.6%, and those against the proposal were 49.1%.

When those who supported or were unsure about the proposal (51%) were asked what would make them change their level of support, the issues of (un)certainty (environmental effects and future regional uses), water use efficiency and the decision making process that had the greatest effect on people’s decisions.

When those who were against or were unsure about the proposal (49%) were asked what would make them change their level of support, and issues associated with certainty and process were seen to be more relevant – for example, if the decision could be reversed, if there was enough groundwater for future needs, and if local people had a say. Support for the proposal markedly increased to almost two-thirds of the total sample if the future needs of the south west could be guaranteed.

An update on levels of support come from a May 2005 study conducted by Market Equity for the Water Corporation. Key findings relevant to the Yarragadee were that 81% are aware of the Yarragadee proposal, and 71% feel it would make them more confident about the water supply. This includes 50% who were considerably more confident.

4.5.1  A social benefit -- Maintaining the status quo

The starting point for considering the proposal’s social impact on Perth is the current status quo – water restrictions for Perth households which allow people to water on specific days, twice a week. The Water Corporation’s current planning uses a demand scenario based on maintaining this twice weekly watering.

Recent research by the Water Corporation (Market Equity, 2005b) shows that the majority of people (90%) maintain support for the current level of restrictions, even with renewed supply. They support a continuation of the current restrictions indefinitely (67%), and would support the prospect of a total winter sprinkler ban (65%) but not a total summer sprinkler ban (31%).

This finding reinforces the findings of a longitudinal study of community attitudes to water restrictions (Nancarrow et al., 2002) which found that Perth residents are reasonably tolerant of moderate restrictions on external water use. The study, undertaken to assist in understanding the likely community acceptance of possible future restrictions, used three surveys:

- In 1988/89, where respondents had no recent experience of restrictions;
- At the end of summer in 1994/95 immediately after the introduction of permanent daylight sprinkler bans in Perth; and
- In 2002, immediately after the introduction of Stage 4 scheme water restrictions (two days per week sprinklers).
Key findings from the longitudinal analysis relevant to this discussion include:

- Over time, as people have experienced restrictions with increasing severity, there is greater support for regular restrictions as a means of conserving water. In particular, the 2002 survey found that the imposition of restrictions had not affected lifestyles, and almost all respondents reported little or no inconvenience.
- Applying restrictions only in times of drought has become significantly less acceptable since 1988.
- Having no restrictions has become almost a non-option.
- The policy of total sprinkler bans every summer has become significantly less acceptable since 1988.
- The importance of implementing an acceptable restrictions policy has become significantly more important since 1988, although it has always been considered important.

These findings show that the Perth community has coped well with the current level of water restrictions, and has accepted the need for ongoing restrictions. They don’t support a total sprinkler ban however, and may see that step as a truer reflection of lack of water planning, than as a solution. They support moderate restrictions and don’t support extreme restrictions.

Given the level of support for maintaining current watering restrictions, the social benefit for Perth people could be conceptualised as the maintenance of current restrictions. The Water Corporation sees the Yarragadee as a critical input in its ability to be able to maintain the supply/demand balance created by this current watering regime, together with the desalination plant and water trading (Water Corporation, 2005a). The cost or social impact of the Yarragadee can then be conceptualised as the impacts if the Yarragadee went ahead compared to the impacts if the Yarragadee didn’t proceed. If the Yarragadee source isn’t used, what are the impacts to Perth residents in terms of cost of water, changed watering regimes, cost of water from another source, and changes to lifestyle. Which of these potential impacts have any bearing on their level of support for the Yarragadee?

These questions were explored in recent focus groups, discussed in Section 6.3 below.

4.5.2 A social benefit – Lifestyle and water consumption

Another dimension of social benefit is drawn from the literature documenting the importance of home gardens for a variety of quality of life variables such as avoidance of stress, recreation, and personal and social identity. From a water resource management perspective, it is reasonable to hypothesise that those households that gain the most personal benefits from their gardens will use more water. Significant amounts of water are used on gardens, with approximately 56% of the total domestic usage being used outside the home on lawns, gardens and swimming pools. If lifestyle and quality of life dimensions are related to gardens and external water use, then what implications exist for lifestyle and quality of life when water restrictions are implemented; and what further
implications might emerge if water consumption is further restricted perhaps due to difficulties in finding appropriate sources.

A CSIRO study (Syme et al., 2003) looked at the relationship between household attitudes towards gardens and gardening, and external water consumption. The study began with the premise that gardens and lifestyle were significant contributors to the urban lifestyle and as such were likely to be important determinants of external water use. In support of the hypothesis, the study found that lifestyle, leisure and an enjoyment of gardening were interrelated and all contributed significantly to external water use. Households who enjoyed a ‘green’ environment, displayed more interest in garden and gardening, used more water externally. The implication is that restrictions, drought management policies and decisions about future sources are associated with measurable and important social outcomes.

Building off a previous study (Thomas & Syme, 1988) that found a price elasticity relationship between external water use and cost of water, Syme et al. propose a “social elasticity” ratio for water use. This suggests a relationship between satisfaction derived from gardening and garden activities and water use, and that a loss in access to external water quantities would affect satisfaction in the garden. This lifestyle impact is also important to consider as a potential social impact in the Perth market. It suggests that lifestyle amenity related to water use is important to people in Perth, perhaps in the same way that environmental amenity is important to people in the south west.

4.5.3 Focus group research to explore social impacts

To understand more clearly the perceived social impacts among Perth metropolitan residents of the Yarragadee proposal, and to explore the relative contribution of factors such as price, watering restrictions, lifestyle, source and sense of place to people’s perceptions of the proposal, a series of focus groups were run during July 2005. These were run by Market Equity on behalf of the Water Corporation.

Previous Water Corporation research (Market Equity, 2005a) indicated that 81% of Perth residents are aware of the Yarragadee proposal, although people were largely unfamiliar with the issues surrounding the source. For this reason, focus groups were chosen to enable exploration of attitudes and issues in detail, and to evaluate reactions to the concept as information is provided. This research (Market Equity, 2005a) identified four categories of water consumers, based on their knowledge and attitudes towards the Water Corporation:

1. Frustrated gardeners/cynics – the most affected by water restrictions and the most negative about the current management of the water resource
2. Uninvolved supporters – in contrast, the most optimistic and supportive, and the last to be impacted by water restrictions
3. Accepting veterans – support water restrictions
4. Tolerating families – support water restrictions but don’t believe there are sufficient plans in place
A focus group was run with each category – four groups in total. Bearing in mind the indicative rather than conclusive nature of the research, the final view of each group was:

<table>
<thead>
<tr>
<th>Category</th>
<th>Final View</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cynics</td>
<td>Do not proceed – there are too many unknowns with Yarragadee. There are better options</td>
</tr>
<tr>
<td>Uninvolved supporters</td>
<td>Proceed with caution. Stop if there are environmental impacts that cannot be managed.</td>
</tr>
<tr>
<td>Accepting veterans</td>
<td>Proceed – Yarragadee is a great option.</td>
</tr>
<tr>
<td>Tolerating families</td>
<td>Proceed – Yarragadee is a great option.</td>
</tr>
</tbody>
</table>

Summary of findings from the discussions are:

**Level of support for the source**

It is relevant to the question of resolving Perth’s water supply issues whether the source is critical to the outcome. That is, what support do people have for the Yarragadee as a means to achieving the status quo for Perth consumers? Discussion points included:

- Respondents in the groups knew nothing or very little about the Yarragadee.
- With no or limited information, perceptions about the Yarragadee tended to be neutral or negative. Negative perceptions appeared to be driven by a belief that there is another more appropriate course of action for increasing the water supply rather than by specific problems with the Yarragadee. Other courses of action frequently mentioned included the pipeline/canal, grey water re-use, and addressing perceived wastage.
- Receiving information about the Yarragadee was vitally important. Without information, respondents in the group were quick to make incorrect assumptions.
  - Tolerating Families and Accepting Veterans, were very positive once they received information about the water source itself.
  - Cynics tended to disbelieve much of the information presented. In order to even ‘hear’ the information and not immediately discard it, Cynics need to know that the information presented is independent and based on long-term studies. Cynics also need a lot of guarantees that the amount (45GL/yr) will not change in order not to immediately disregard the proposal as a bad idea.
  - Young involved supporters were supportive of the Yarragadee when they found out that the source was replenished. However, upon hearing that there are some environmental impacts, their support declined.
  - Knowing there are environmental impacts lessened support. Less supportive respondents assumed the environmental impacts would be quite extreme.
  - The key information that people responded positively to was:
    - That the system replenishes
    - That extensive investigations have been conducted.
    - That local needs have been assessed and will be met first.
These are consistent with findings from the CSIRO study which showed that people would change their support for the Yarragadee from opposition to neutral or supportive if issues associated with certainty and process could be answered -- for example, if the decision could be reversed, if there was enough groundwater for future needs, and if local people had a say. In the CSIRO study (ARCWIS, 2003), support for the proposal markedly increased to almost two-thirds of the total sample if the future needs of the south west could be guaranteed.

- Key questions about Yarragadee that respondents wanted answered in order to make up their minds more fully about their levels of support were:
  - What are the long term impacts of taking water?
  - How can the long-term impact be calculated when weather/rainfall is an unknown?
  - Extent and longevity of impact studies/who is behind these studies
  - What are the impacts on vegetation, flora and fauna
  - How will it affect local industries such as the wine industry
  - What are the other options for obtaining water and relative costs
  - Why is Yarragadee considered a good option? What is the weight given to cost/environment/social impacts?
  - What guarantees are in place that only 45GL will be taken? And what happens if more is taken?
  - Has population growth been factored in to the equation of how much water is required?

**Potential impacts**

It is relevant to the question of water source so to see whether cost of water, changes to lifestyle, or changed watering regimes are associated with whether or not the Yarragadee proposal proceeds.

- Perth residents in the focus groups did not feel that Yarragadee progressing will have any significant impact on them other than perhaps making them feel more secure about the water supply and increasing water costs. While respondents thought the cost of water may increase to pay for the infrastructure, they also believe that even if Yarragadee doesn’t go ahead, another initiative will and therefore water costs will rise regardless.
- Respondents didn’t think that Yarragadee would or should lead to any changes in restrictions. They felt that restrictions should stay in place regardless of whether the Yarragadee progresses. Others felt that to take water from the Yarragadee and then ease restrictions would send a negative message to the south west.
- Respondents see Yarragadee as one of a range of options and therefore do not believe there will be any real impact of Yarragadee not progressing – they believe if Yarragadee does not progress, another initiative will.
Sense of place

Focus groups participants recognised the value of the south west to the State, and felt an attachment to the area. They did not want to see adverse environmental effects in the south west from the Yarragadee proposal, and it was concern for possible environmental effects that appeared to lead two groups to urge caution.

These brief comments are consistent with findings from the ARCWIS (2003) study which showed that people would change their support for the Yarragadee from supportive to neutral or opposed if there was uncertainty of environmental effects. Concern about environmental effects was one of the strongest of six trade-off decision points discussed in the previous research.

4.5.4 Conclusions about Perth impacts

The focus groups are not representative of the whole Perth population, but their value is their role in highlighting how people are approaching key issues, and the range of factors or decision-points used as they consider the issues. Of particular interest was whether the issues raised through this methodology were similar to those raised through the quantitative methodology applied by CSIRO in its questioning of the proposal in 2003. On some key points, as discussed above, there appeared to be consistency with some of the previous findings. While a future step at some point would be the testing of these considerations through formal market research, the indicative findings from this study suggest that the issues that Water Corporation has to respond to in developing the Yarragadee proposal are already well known, and that confidence can be placed in the previous research as a benchmark for the issues to be addressed.

In essence, Perth people are looking for a solution, and would like to see the solution involving work on development of a new source concurrent with work to reduce inefficient water use. They do not see the benefit of a new water source in terms of being able to ease water restrictions, but to enable Perth to maintain current restrictions while having enough water for the growing population. They felt that the new water source should be used for more pressing things than the watering of lawns.

Participants are concerned about the potential environmental impacts, and wanted good clear unbiased information on the Yarragadee itself and its impacts. Those who haven’t made up their minds about the proposal may be waiting for good information to use in forming an opinion. Focus group participants who felt negatively about the proposal assume that the proposal will have negative environmental impacts.

In summary, the issues appear not to have changed since the ARCWIS (2003) research. Most of these issues have been subsequently addressed by the Water Corporation in its development of the Yarragadee proposal.
4.6 Construction and operation impacts of the proposal

The focus in discussions with communities has been on the proposal to extract water from the Yarragadee. However, the potential social impacts of construction and operation also need to be considered. Community expectations raised during the phase one research are for some short-term economic benefit from employment of construction workers, but no long-term impacts positive or negative from the operation per se.

Modelling has defined a proposed wellfield on the Blackwood Plateau, south of Busselton and west of Nannup, which would have minimum impact on groundwater in the south west. The wellfield is in State Forest, and the proposal is for eight or nine bores. Water would be piped to a micro filtration based treatment plant on the Whicher Scarp to the north of the source works, and then transported by transfer mains the Stirling Trunk Main. The water can be gravity fed along the pipeline route, eliminating the need for pumping stations along the route.

The pipeline from the borefield to the treatment plant would primarily travel through State Forest, subject to access issues being resolved with CALM and the Conservation Commission. The pipeline route is still to be determined, but a potential corridor would be likely to pass through State Forest and between 150 – 200 private properties, depending on the final route. The pipeline would run underground.

Properties in the southern part of the pipeline route (south of Dardanup and Burekup) are primarily used for dairying and agricultural production. The Water Corporation’s intention would be to lay the pipeline through these properties. Properties in the northern part of the pipeline route tend to be smaller irrigated lots and the Water Corporation’s intention would be to lay the pipeline along roads or boundaries as much as possible rather than going through properties.

A potential pipeline corridor has been defined by the Water Corporation, but details of the exact route will be determined following discussion with landholders in the corridor, with the intention of minimising impact for those people and their operations. The potential corridor avoids remnant bush and heritage sites. An extensive consultation process is envisaged prior to the route being finalised.

Impacts associated with the water supply project will occur mainly during the construction phase more so than during its ongoing operations, although some access is likely to be required for monitoring and maintenance tasks. Construction impacts will occur, but will be contained within a defined construction schedule which is anticipated to run for an 18-month period.

4.6.1 Impacts during construction

There will be three separate construction projects: the wellfield, the treatment plant, and the pipeline.
The wellfield

Located in the eastern Blackwood Plateau, the closest towns are Busselton and Nannup. Construction of the wellfield is likely to require a total construction time of 18 months. This is highly specialised work which will be managed by a large contractor with specialised and experienced drilling crews. While such specialised services are unlikely to be sourced locally, Water Corporation has a “buy local” policy and would seek local contractors where appropriate such as for earthworks, supplies and haulage. The wellfield construction workforce is expected to be 20 to 30 specialised people, of which only some suppliers potentially could be sourced locally. These local workers would be needed throughout the construction schedule.

The specialist drilling teams are required to be in town for the duration of the construction period, and would require local accommodation in nearby towns. Previous drilling contracts for the investigation drilling program have stayed in accommodation in Nannup.

Construction crews from out of town may choose to locate in Nannup or Busselton during the construction period, providing a boost to the local economy for the duration.

The treatment plant

Located on the Whicher Scarp in State Forest to the north of the source works, the closest towns are Capel and Nannup. Construction of the treatment plant is likely to require a total construction time of 18 months.

The treatment plant construction workforce is likely to be up to 100 people, and doesn’t require the high level of specialisation needed in wellfield construction and laying of pipelines. Various civil works and engineering support services such as concrete works, fencing, earthworks, fabrication and surveying will be needed and local suppliers will have the opportunity to sub-contract to the experienced lead contractor. Each of these skills are found in the regional centres of Busselton and Bunbury, and some could be sourced from other towns. It is likely that the civil preparatory work needed in the first six months of construction could be sourced locally, with outside workers needed progressively from that point.

Access to the proposed site would be via established main road systems. Some additional traffic loading on roads adjacent to Jarrahwood can be expected, during normal working hours for a construction site, ie. daytime traffic rather than evening or night-time traffic. The Jarrahdale community is likely to have concerns about the impact of additional traffic and the Water Corporation would be advised to plan in close liaison with the Jarrahdale community.

A workforce of up to 100 people coming in to a community the size of Nannup (total population of 1400, of which approximately 600 are town-based) would have significant impacts, arising from both the size and length of influx. The town of Capel has a
The population of 1600 (http://www.capel.wa.gov.au/tourism/stay.htm) which would also notice the impact of an additional 100 people in the community for 12 months. If sufficient accommodation is not available locally for these crews, they would be likely to base themselves in a larger centre such as Busselton or Margaret River for the duration.

The pipeline

The construction of the buried pipeline will create more direct impact on the community than the treatment plant or wellfield, due mainly to the nature of the excavations required to bury the pipe, and land issues related to large linear infrastructure.

The process of laying the pipeline involves:
- Surveying and geotechnical investigations
- Indigenous heritage surveys
- Advance site work including fencing off the trench site
- Digging the trench and storage of the earth
- Laying the pipe
- Backfilling of the trench and restoration of vegetation.

Construction will be possible during the summer months only, November until April, over two summers.

The pipeline route crosses through two distinct areas of farmland on the Swan Coastal Plain. The northern section from Dardanup to Harvey is within irrigated areas, and the land usage is closely aligned to the availability of irrigation water. Farming practices such as flood irrigation on smaller sized properties are common, and to avoid any possibility of disturbing the gradient across each property, the pipeline route would aim to avoid irrigation drains and would follow property boundaries or roads.

The southern section between Dardanup to the foot of the Whicher Scarp east of Capel is in an area predominantly used as pasture for dairy and beef production. The property sizes are much larger than the irrigated properties, and the impacts of a pipeline crossing the property would be quite different. The direct impacts would include possible disruption and isolation of grazing pasture for a period while the pipe trench alignment was fenced off. The trench itself would see the loss of a strip of pasture for possibly one season, although the proposed construction would re-establish the pasture seed bank for restoration through the next growing season.

Construction work through summer would impact on cropping activities, and in recognition of this the land easement compensation would take into account land value as well as lost income from cropping.

The impacts of this would be managed as much as possible through individual negotiation with each landholder, with the intention of scheduling the work to minimise this potential disturbance. Depending on the size of the property accessed, the on site work may be an average of one to two weeks’ duration.
Other potential impacts may be dust levels, noise levels, the effects of increased traffic on site, access disturbance, and the effects up a workforce of up to 20 people on each pipelaying front. The overall project would require multiple work fronts along the entire length of the pipeline, something in the order of 7 to 10 fronts to meet the tight construction window of two summer periods. The Water Corporation would seek to manage these issues through its Construction Management Plan, and in cooperation with landholders. Traffic on to the properties will be for the delivery of pipes and equipment, haulage of soil for storage, and excavation equipment.

The laying of the pipes is a specialist skill and would be provided by contractors. Additional suppliers would be needed, for haulage of pipes, removal of excess soil, and excavation, and local suppliers would have an opportunity to be sub-contractors to the main contractors for the work. The regional centres of Busselton and Bunbury would have local contractors with capacity to undertake these various aspects.

Construction would move progressively along the pipeline route, and construction workers may choose to stay in one spot for each six month construction period, or may choose to move along the route. The pipeline corridor is closely aligned to the towns of Harvey, Dardanup, Boyanup, Capel and Nannup, but it is possible that the contractors may base themselves in Busselton or Bunbury to take full advantage of existing haulage routes, and suppliers.

Land acquisition would be in the form of easements consisting a strip of land either side of the pipeline, which are to protect the pipe from disturbance. The easements do not impede agricultural practices, vehicular movement, but do protect from any excavation associated with farm dams, fencing and structures.

4.6.2 Impacts during operation

The wellfield

The wellfield will be located within state forest but adjacent to existing roads for the purposes of construction and maintenance. Access for maintenance will be maintained, but on-site activity would be minimal, for example, removal of the bore pump for servicing. Noise will be minimal and would be kept well within acceptable limits through the design of the bore headworks.

Power to supply the wellfield will be supplied by existing power lines or underground for areas within state forest to reduce the clearing impact.

The treatment plant

Operations of the treatment plant will not have a direct impact other than its visible presence. Buffer zones for the treatment process will be contained within the property and are a substantial distance of over 3km from the nearest dwellings.
The operation of the facility will mean that there will be more traffic on the roads than before. This will include access by Water Corporation operators to inspect and operate the plant, and by service contractors for electrical and mechanical maintenance of the plant, plus the regular delivery of the consumable chemicals for the plant. Delivery trucks will use existing roads, but travel routes will not pass through the community. The chemicals carried are not hazardous and would not represent a health hazard if spilled.

The Water Corporation will need to discuss these issues with the Jarrahwood community.

The pipeline

There are likely to be minimal effects of operation on the community, with those effects resulting from three aspects:

1. Access for monitoring and maintenance

Periodic checks will need to be undertaken along the pipeline. In the southern half of the pipeline where the pipe is laid through properties, there may be a need to access the property for monitoring checks. In the northern part of the pipeline where the pipe is expected to be laid along boundaries and roads, the monitoring may be possible without the need to access properties.

Normal Water Corporation practice would require contact with landholders to arrange access prior to monitoring visits being made.

2. Visibility of above-ground infrastructure

Air valves are installed at regular intervals along the pipeline. These project above the ground and generally require a protective bollard to prevent damage from livestock or farm equipment. Hence it becomes visible.

Normal Water Corporation design practices follow the principle of locating air valves and other structures near road reserves and boundaries to minimise impact on agricultural production and harvesting. However some may be required within properties.

3. Constraints to site activity caused by easements

The easements would not impede horticultural or agricultural practices, except where excavation is required that could possibly damage the pipeline. The pipe would have a 100-year design life, which means that maintenance on the pipe would not be proposed unless monitoring detects a problem. Traffic loadings would not require any restrictions on farming equipment, and the depth of the pipeline would be such that activities including deep ripping could still occur. The easement would not need to be separately fenced off so that grazing activities would not be impeded beyond the initial construction activities.
In any areas where permanent access was required, the easement would include this as a usage of the land, and consequently the compensation for this type of easement would increase to accommodate this restriction to the land owner.

### 4.6.3 Potential benefits from the proposal

During phase one discussions, mention was made about the possibility of farmers who have the pipeline running through their properties having access to the water. The proposal is envisaged to provide benefits for major users on the pipeline route such as the Kemerton Industrial Estate.

The infrastructure required to give local farmers direct access to the pipeline is costly. This is because a supplementary pipe would need to be constructed to run alongside the main pipe. The cost for this access would need to be borne by the farmer.

### 4.7 Conclusion and summary of phase two findings

The social impacts from this proposal are both positive and negative. In relation to the proposal itself, the positive impacts relate to the increased access to water in the south west afforded by an extended IWSS (e.g., the Kemerton Industrial Estate in the short term, and the Busselton and Margaret River communities in the medium to longer term), the protection to local south west use afforded by the principles of Reasonable Regional Need, and the ability to maintain current water restrictions for IWSS users in the face of potentially more severe restrictions.

Communities such as Augusta are unlikely to be affected by this proposal. Environmental and ecological impacts on the Blackwood, and in other specific locations, are envisaged to be minor and manageable and are not expected to change sense of place, or impact on social values, enjoyment or amenity of the River.

Negative social impacts may occur for Scott Coastal Plain farmers where the incremental constraint on water use presented by this proposal may have an impact on future development capability for their business. If this was to happen, there may be a small economic flow-on affect to the Shire of Nannup. However, given the shire’s track record in weathering the much larger implications of the fall-out of the Regional Forest Agreement, the scale of potential impact as a result of changing land use on the Scott Coastal Plain is expected to be small.

The implications for cultural water values are being explored with the Indigenous community and will be reported separately.

This does not remove the need for extensive care as the proposal and project proceed. The only way to ensure that the concerns vividly expressed by the community do not occur is to be careful, vigilant and transparent. Methods to achieve this will be discussed in the next section.
Social impacts during construction and operation also need to be addressed. Operationally there will be minimal social impacts and these can be addressed through good management practice and good local communication by the Water Corporation. The construction phase would last for 18 months and significant impacts are likely to be experienced during this period. Impacts include:

- Impacts on individual landholders whose land is on the pipeline route. Impacts include disturbance to summer cropping, access issues, dust, noise, increased traffic on site, and the effects of a workforce of up to 20 people on site. Access will need to be negotiated with each landholder prior to proceeding.
- Impacts on local communities due to the high influx of construction workers for extended periods of time. Positive benefits include the economic flow-on benefits into the community through accommodation, meals and other services. Negative effects could occur in Nannup or Capel from the volume of people coming into those communities over an extended period to work on the treatment plant.
- Positive impacts on local communities through the employment opportunities available to tradesmen and suppliers of relevant services. Opportunities will exist on all three construction fronts.

Following the social impact assessment work undertaken in phase two, the implications for social factors identified in the Scoping Report (Strategen, 2005a) are summarised below.

<table>
<thead>
<tr>
<th>Social factors</th>
<th>Summary of impacts in relation to each factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lifestyle, amenity and recreational use and access</td>
<td>The modelling and environmental research reports identify localised and manageable impacts at specific points along or close to the Blackwood. The extent of impacts is generally low, will not have an effect on recreational use of the Blackwood, or aquatic life in the Blackwood, or quality of the river itself. Therefore lifestyle, amenity and recreational use are unlikely to be negatively impacted by this proposal. Lifestyle where it relates to impacts on farming communities will be impacted in the Scott Coastal Plain area – this is explored under the factor “Existing and future needs”. Monitoring options will need to be explored to ensure that unexpected negative impacts do not occur, or are quickly managed through adaptive management practices.</td>
</tr>
<tr>
<td>Sense of place</td>
<td>The modelling and environmental research reports identify localised and manageable impacts at specific points along or close to the Blackwood. The extent of impacts is generally low, will not have an effect on recreational use of the Blackwood, or aquatic life in the Blackwood, or quality of the river itself. Given that people who use, visit or live alongside the Blackwood are unlikely to experience changes in their current relationship with the area, sense of place is unlikely to be impacted negatively by this proposal. Monitoring options will need to be explored to ensure that unexpected negative impacts do not occur, or are quickly managed through adaptive management practices.</td>
</tr>
<tr>
<td>Indigenous communities</td>
<td>Some heritage sites may be affected, specifically the Blackwood River and St John’s Brook area. The implications of these effects need to be discussed with the Indigenous communities, and will be reported separately.</td>
</tr>
<tr>
<td>------------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Existing and future needs</td>
<td>The proposal will have positive social impacts in a number of communities, and on a State basis due to: the increased access to water in the south west afforded by an extended IWSS (eg., the Kemerton Industrial Estate in the short term, and the Busselton and Margaret River communities in the medium to longer term), the protection to local south west use afforded by the principles of Reasonable Regional Need, and the ability to maintain current water restrictions for IWSS users in the face of potentially more severe restrictions. Neutral effects are expected in Augusta. Negative social impacts may occur for Scott Coastal Plain farmers where the incremental constraint on water use presented by this proposal may have an impact on future development capability for their business. If this was to happen, there may be a small economic flow-on affect to the Shire of Nannup. However, given the shire’s track record in weathering the much larger implications of the fall-out of the Regional Forest Agreement, the scale of potential impact as a result of changing land use on the Scott Coastal Plain is expected to be small. Mitigation initiatives will need to be explored in relation to the Scott Coastal Plain farmers.</td>
</tr>
<tr>
<td>Equitable access to water</td>
<td>The increased access to water in the south west afforded by an extended IWSS (eg., the Kemerton Industrial Estate in the short term, and the Busselton and Margaret River communities in the medium to longer term), and the protection to local south west use afforded by the principles of Reasonable Regional Need go some of the way to resolving concerns about equitable access to water. Mitigation initiatives will need to be explored to balance the perceptions of benefit and equity.</td>
</tr>
</tbody>
</table>
| Development footprint | Construction impacts:  
• Negative but short-term impacts for landowners during laying of pipeline  
• Positive employment opportunities for local tradespeople during construction phase on all three construction fronts  
• Positive and negative impacts for local communities as a result of influx of construction workforce – positive economic returns, negative social disruption.  
Operational impacts – minor and manageable. |
5. PHASE THREE: POTENTIAL MITIGATIONS AND MANAGEMENT MEASURES

In this phase, consideration is given to how the social impacts can be managed. While many of the concerns raised by community members in phase one scoping and profiling can be met through the provision of accurate information, other issues and impacts may need alternative action.

5.1 Ideas from the community about potential safeguards

In the scoping and profiling phase, community members were asked for their ideas on what actions Water Corporation should take to safeguard community interests and optimise outcomes for local communities, should the proposal proceed. Their ideas are summarised below, illustrated with direct quotes from respondents.

Maintain local access to water
If there’s a problem, Water Corp access should be shut off rather than the locals having their water cut.
Memorandum of Understanding between Water Corp and the region – that should restrictions apply, the region should have first call on that resource. Unless equity is seen, the community will oppose it.
SW would need a guarantee that it had a supply.
Would like to hear: “We’re coming in, will assess the needs, and make sure your needs are met first”.
Water Corp is taking and giving nothing in return. We need security from Water Corp. Rural people will be affected because we’re not on any schemes. If we lose water due to Water Corp, then we want help, want security.
Do something to remove constraints for people getting bore licenses.
People are worried about who’s going to get shut down.

Make it easier to communicate with Water Corp if there are problems
If we were affected (eg. if bore dried up), would want somewhere we could go and get some help.
Would like someone to talk to.
If take the water and there’s a problem for us, will Water Corp help us? This is what we’d like to see.

Being prepared to bin it if it all went pear-shaped
What’s the response if things go wrong? Elsewhere responses have been slow. How will WC respond and how quickly?
If shown to be reductions, it should be stopped. Needs a legal agreement about how this should be dealt with. Don’t want to be locked in to an arrangement that’s not entirely satisfactory.
If it goes pear-shaped, we want right of rectification.
Capacity to reduce allocation if drawing is seen to be not sustainable, so we’re not locked in to the 45GL.
Spell out what impacts are predicted; what impacts are enough to turn the tap off; and who would be involved in making that decision.
Do your homework first – do enough to necessitate that it won’t need to be turned off. Give it 3 or 4 years to make sure it’s well researched.
Improve regional water supply
There is huge expansion potential in the SW. There will need to be a better water supply. There is potential to run a pipeline down the coast giving a strategic ability to run water north and south.

Peer or independent review of research
Independent scientific body to look at the process – CSIRO, Office of Economic Regulation? Peer review the studies – use highly-qualified people to give their opinion on how it stacks up. Get an appraisal done using independent input – there are people and organisations with credibility on environmental issues eg. cape to cape Catchments Group, Leeuwin Environment Group, NGOs, Conservation Council, universities (Pier Horwitz, David Morgan). Have to get a second opinion. Without that, community will always have fears.

Community and/or independent involvement to ensure independence
The Beenup Community Consultative Group worked with the company on environmental issues. The consultative committee drew members from local government, local landowners and local environmental groups. Form a group to monitor the Blackwood daily – fishermen, landcare groups, tour operators. Look at the river, pick up changes, communicate to advise about the changes, and have someone to answer questions, process to advise and get action. Community would need to know about the monitoring so they can contribute.

Who’s monitoring the monitor? Someone independent with credibility. It’s a trust issue. Community involvement in everything – target setting, monitoring, decision making, when to turn it off. Should not just be a committee of regional groundwater users. Include environmental interests such as NGOs, Conservation Council and the Wilderness Society.

Create a local management committee (comprising Shire, Water Corp, WRC, and local users – industry and irrigators) with responsibility for total management of surface and deep water. Benefits: transparency, access to local information, bringing together the monitoring results, all issues dealt with, decentralising the management.

Ongoing monitoring
Ongoing monitoring to check the modelling and if there’s a problem, would need to stop. Monitoring to test salinity levels; check fish stocks; see whether there are any reductions in bore levels; plus publication of monitored results; monitor levels of water in the aquifer (depth and quality); what’s happening to the Blackwood; checks on the flora. Need to know what the baseline is.

Monitoring of drawdown: visual indicators, death of plants, depth of water table. Need to have sufficient monitoring points close to where it’s being pumped.

Need monitoring results interpreted by an independent consultancy paid for by the regulator DoE. Equates to community assessment = public endorsement.

Annual reports from CALM.
Monitor very intensively for first 2 years – almost daily. At the end of the first year will know what’s gone in and out.

Total transparency – have a column in local newspaper to report monitoring results. People need to see what’s happening. Will it be on the website?

Get schools and universities (doctoral research projects) involved in monitoring. Community watchdogs would check that the 45GL was adhered to and that more was not taken.
Follow a cautious approach
Need a large margin for error. For example, to say “We can draw 150GL but will only draw 100”.
Allow for the effect of the drought in the future.
Look at what the science says can be abstracted, then say that the water will not be abstracted to
the limit, and will be used sparingly
Incremental development – more responsible
Small amounts and monitored
Don’t want any environmental trade-offs. The risk is too great because of the uncertainty factor.
People want a cast-iron guarantee of no risk.

Community involvement in determining who gets access to the water
If it went through an independent local board to assess, using local-based expertise eg. the
Busselton Water Board, local people. Not acceptable if it’s a Perth-based decision. Local
community to control whether the water goes out.
Develop a special extraction committee with local and regional representation to manage the
extraction – gives regional ownership of the management of extraction, and control.
Have whole extraction and supply run by a SW Regional Water Supply Committee. Supply
would be subject to a supply agreement.

Take 45 and no more
SW would need a guarantee that Water Corp will take 45GL and no more

Compensation
If there are downstream impacts of any sort, there’s got to be a compensation factor because
people are investing in infrastructure.
Government to pay to put our bores down further if the water level is lowered.

In summary, ideas from the community that should be considered by Water Corporation are:
• Have a clear understanding with the community about the process to be followed if
problems start to emerge – chain of communication to register concerns and get action;
agreement about who gets access to the water if there’s a problem; agreement ahead of
time about what impacts are enough to turn the tap off, and clarification of who makes
that decision. A Memorandum of Understanding has been suggested as a possible
mechanism.
• Ensure that the peer review of research is promoted, and the findings available to the
community.
• Negotiate a community role in monitoring, involving local people who are in contact
with the area daily, and involving a diversity of local interests. This could be
established on a localised basis.
• Establish and work to a principle of total transparency of monitoring results, with
regular reporting to the community about river health, drawdown results, and transect
readings. Additionally, an outside authority could be asked to complete and publish an
annual audit of the monitoring and adaptive management practices.
• Monitor and report frequently, particularly early in the process. If early indications are
that there are problems, then Water Corporation has the opportunity, and will be
expected, to move quickly to resolve the problem. Likewise if early indications support
the modelling, this will help to build community confidence.
• Ensure that the decisions about Yarragadee are being led by the science, and ensure that that science is well understood in the community.

5.2 Recommended mitigations for social impacts

To assist the Water Corporation, the Yarragadee social impact assessment has aimed to identify the nature of impacts perceived for specific south west communities and IWSS consumers. The essence of the assessment has been to identify the implications of those impacts on individuals and communities.

Given the scope for some negative impact, likely or unlikely, the Water Corporation should implement a planned program to manage any impacts that arise. Relevant management strategies include mitigation and monitoring. Mitigation involves the management of both the positive and negative effects of the proposal on a local community, including the individuals impacted. Monitoring is an ongoing process to evaluate and review the effectiveness of mitigation strategies and make adjustments as necessary.

The mitigation hierarchy for identified social impacts includes (Burdge, 2004a, p. 161):

- Avoidance of social impacts
- Minimise social impacts
- Rectify social impacts
- Reduce social impacts
- Manage unresolved social impacts

One of the key factors which influences perceptions of equity and benefit is the stated lack of trust of Water Corporation, highlighted during the phase one research. Elements in the ongoing management and mitigation which would assist in building trust include:

a) An agreement about how the water would be shared and how to jointly resolve shared access if water availability changed, as shown by these comments
b) Transparency of monitoring
c) Independent involvement
d) Local representation
e) An agreement about process if the monitoring shows there’s a problem

The social impacts from this proposal are both positive and negative. In relation to the proposal itself, the positive impacts relate to the increased access to water in the south west afforded by an extended IWSS (eg., the Kemerton Industrial Estate in the short term, and the Busselton and Margaret River communities in the medium to longer term), the protection to local south west use afforded by the principles of Reasonable Regional Need, and the ability to maintain current water restrictions for IWSS users in the face of potentially more severe restrictions.

Communities such as Augusta are unlikely to be affected by this proposal. Environmental and ecological impacts on the Blackwood, and in other specific locations, are envisaged
to be minor and manageable and are not expected to change sense of place, or impact on social values, enjoyment or amenity of the River.

Negative social impacts may occur for Scott Coastal Plain farmers where the incremental constraint on water use presented by this proposal may have an impact on future development capability for their business. If this was to happen, there may be a small economic flow-on effect to the Shire of Nannup. However, given the shire’s track record in weathering the much larger implications of the fall-out of the Regional Forest Agreement, the scale of potential impact as a result of changing land use on the Scott Coastal Plain is expected to be small.

The implications for cultural water values are being explored with the Indigenous community and will be reported separately.

Social impacts during construction and operation also need to be addressed. Operationally there will be minimal social impacts and these can be addressed through good management practice by the Water Corporation. The construction phase would last for 18 months and significant impacts are likely to be experienced during this period. Impacts include:

- Impacts on individual landholders whose land is on the pipeline route. Impacts include disturbance to summer cropping, access issues, dust, noise, increased traffic on site, and the effects of a workforce of up to 20 people on site. Access will need to be negotiated with each landholder prior to proceeding.
- Impacts on local communities due to the high influx of construction workers for extended periods of time. Positive benefits include the economic flow-on benefits into the community through accommodation, meals and other services. Negative effects could occur in Nannup or Capel from the volume of people coming into those communities over an extended period to work on the treatment plant.
- Positive impacts on local communities through the employment opportunities available to tradesmen and suppliers of relevant services. Opportunities will exist on all three construction fronts.

5.2.1 Monitoring

Community members have identified a number of aspects and areas that they believe need to be monitored. For example, monitoring of the Blackwood River and monitoring of critical indicators such as flow rates, water quality, vegetation, flora and aquatic life, would allow any changes to be identified and programs immediately implemented to manage the changes. The aim is minimisation and rectification of any environmental impacts to avoid social impacts.

In addition, monitoring of ecological criteria and water indicators in areas other than those likely to be affected should be maintained. For example, impacts at Augusta and Margaret River. The aim is minimisation and rectification of any environmental impacts to avoid social impacts.
As stated above in relation to the dimension of trust, there needs to be local involvement in the monitoring process and reporting of the monitoring. To meet the community concerns about independence of the monitoring, and to benefit from the extensive community knowledge about the area, the recommendation is to establish a mechanism for local monitoring. This could involve one overall group to work jointly with the Water Corporation in the collection, analysis and dissemination of data, or a series of groups involving independent and knowledgeable people with responsibility for monitoring of a particular location.

Further, the Water Corporation should consider working jointly with stakeholders in the south west – the Community Reference Group, the Shires, or the Whicher Water Resources Management Committee -- to design a group which achieves both the ability to monitor effectively, and the independence and credibility sought by the community.

Monitoring should include the monitoring of social performance indicators related to the proposal. Specifically, monitoring would closely track Water Corporation adherance to social commitments made to the communities. Such commitments are likely to include:

- Frequency and comprehensiveness of reporting monitoring results to the community
- Effectiveness of process to report concerns and have them dealt with
- Adherance to conditions specified in community agreements

Social performance indicators would be determined following development of Water Corporation commitments to the community with this proposal.

5.2.2 Mitigation

As distinct from the monitoring strategy outlined above, three mitigation recommendations are offered. The first of these proposes direct dialogue with affected communities or individuals to address their concerns as much as possible. The other two recommendations are designed to increase the benefits the south west communities will derive from the proposal in direct response to the perceptions of lack of equity and benefit discussed earlier.

1. Direct involvement with impacted communities or individuals

Negative social impacts may occur for individuals or specific communities during the construction or operational phases of the project. For example, construction impacts can be largely minimised through Water Corporation’s standard procedures which include discussion with landholders to plan construction activities to minimise disruption.

Negative social impacts may occur for Scott Coastal Plain farmers where the incremental constraint on water use presented by this proposal may have an impact on future development capability for their business. This would be an individual-level impact, the extent of which is hard to determine. It is difficult to determine for example whether the combined effects of additional drawdown impacts presented by the proposal together
with impacts resulting from current land use management practices would lead individual farmers to change land use in the area. Would the combined effects lead them to choose to lease land to blue gums, and if so, what percentage of their land might be involved. The Yarragadee proposal is only one part of the picture, but it is acknowledged that it adds an additional complication to landholders in the area.

The Scott Coastal Plain farmers that have been contacted during the sustainability evaluation process are not in favour of this proposal proceeding. The question though is whether there is a way of developing the proposal to achieve the envisaged benefits of water availability for the broader State-wide community while also achieving the goals of the Scott Coastal Plain farmers. This is worth exploring. An initial discussion between the Scott Coastal Plain farmers and Water Corporation (August 4, 2005) identified some issues which the farmers would like answers to – soil composition and changing pH balance, the amount of irrigation water flowing back into the water table – which Water Corporation could help to examine.

The recommendation is for the Water Corporation to suggest to the Scott Coastal Plain farmers the option of working together to solve some of these problems, leading to a situation where both can access the water and derive benefit from it. The discussions could start immediately with the intention of working together for as long as both wish to.

2. sustainability initiative

This recommendation is for the Water Corporation to support sustainability initiatives in the south west, to be administered by a Sustainability Board – a locally based group -- for the benefit of the south west community broadly. Criteria for support of initiatives would be developed jointly between the Water Corporation and members of the Sustainability Board, and may consider applications for projects that can demonstrate a sustainability rationale and would achieve benefits in environmental, economic and social terms. For example, water sensitive communities may apply for funding to support research into better land use management practices, or to fund local community development.

The rationale for the Sustainability Initiative can be explained on environmental, economic and social grounds. The social justification is for the fund to contribute to a net positive benefit for the community by funding projects that achieve tangible community benefits. As such, the fund could support projects which:
- build up other economic sectors such as tourism,
- explore alternative employment creation strategies;
- support specific environmental projects in the region.

Details of such a program would be developed jointly with the south west communities to ensure relevance of criteria to the needs of the community. The Sustainability Board itself is envisaged to comprise a broad-based membership including the Shires, South West Development Commission, environmental interests, and Water Corporation.
A recent example of a similar project in Western Australia was the Harvey River Restoration Trust, created as a community pledge as part of the Water Corporation’s Harvey Dam project. (www.watercorporation.com.au/community/community_stirling_factsheets_hrrt.cfm)

Shared agreement to view the Sustainability Initiative as a means to create future opportunities would be a positive outcome.

3. South West Water Futures Planning Study

One of the main findings from the scoping phase was a perception among SW communities that the proposal offered benefits to the IWSS consumers and not to the south west itself. People identified local communities who had a sub-standard water supply either in terms of availability or quality, and they perceived as inequitable the proposal to take water from the area when it was needed locally.

The sustainability evaluation investigations have uncovered the need for strategic planning for future water supply in the south west. Had such planning been in place prior to this proposal, the evaluation would have had a strategic framework to work within.

As an outcome of this study, the recommendation is for a South West Water Futures Study to be undertaken to develop the plan for future water needs in the south west and how they will be delivered. A number of people would need to participate in such a study including the State and Local Government, the Bunbury and Busselton Water Boards, the local economic alliances, and the Whicher Committee. This is envisaged as a joint planning exercise to achieve the desired outcomes of clear expectations for water supply, assessment of alternative options, costing and feasibility, and timeframe. It would take some time to achieve the outcomes but would provide certainty to the South West, and would help to resolve the concerns of futures foregone, benefit and equity, and accommodating reasonable regional needs.

The proposition that the IWSS will be extending into the region and consequently providing opportunities for an integrated public water supply to service local needs will require definition that is beyond the scope of the sustainability evaluation. While the Yarragadee proposal will deliver a quick solution to a critical water shortage, the maximum benefit would come from taking this step within the context of a longer term plan for the south west.

This project provides the catalyst for such a study and the recommendation is that Water Corporation facilitate the study.
5.3 Summary of phase three recommendations

Following consideration of monitoring and mitigation options in phase two, the recommendations for action relevant to each social factor identified in the Scoping Report (Strategen, 2005a) are summarised below.

<table>
<thead>
<tr>
<th>Social factors</th>
<th>Summary of mitigation and enhancement options in relation to factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lifestyle, amenity and recreational use and access</td>
<td>Ongoing monitoring needed of environmental, economic and social performance.</td>
</tr>
<tr>
<td>Sense of place</td>
<td>As above.</td>
</tr>
<tr>
<td>Indigenous communities</td>
<td>Still to be determined and will be reported separately.</td>
</tr>
<tr>
<td>Existing and future needs</td>
<td>Direct contact to be offered to Scott Coastal Plain farmers to work jointly to local area issues. Sustainability Initiative is a mitigation strategy which could be used to support sustainability projects of benefit to the area. A SW Water Futures Planning Study to plan for future public water supply in the south west.</td>
</tr>
<tr>
<td>Equitable access to water</td>
<td>Sustainability Initiative is a mitigation strategy which could be used to support sustainability projects of benefit to the area. A SW Water Futures Planning Study to plan for future public water supply in the south west.</td>
</tr>
<tr>
<td>Development footprint</td>
<td>Extensive consultation with landholders along potential pipeline corridor prior to finalisation of pipeline route.</td>
</tr>
</tbody>
</table>
6.0 CONCLUSIONS

This social impact assessment has used a values-based approach to understand and assess the social impacts of the Yarragadee proposal. Starting with a study of the local communities close to the proposed borefield, the assessment sought to understand the communities and, from their perspective, to identify the social variables of interest.

This approach draws from the finding from the ARCWIS (2003) study that: “People are able to express their values without an understanding of the scientific and planning complexities. Communities therefore expect the planners and experts to make considered decisions, based on community values, expectations and concerns. In fact, these values will be the criteria for community judgement of the final decision once all investigations have been completed” (p. 50).

Phase one of the study concluded that there were three social variables of interest:

1. Sense of place and social values – related to extent of environmental impacts, whether those impacts will affect environmental amenity and hence sense of place, and if so, whether they can be managed
2. Futures foregone – related to water availability; how much is available, whether it can be sustainably taken, whether the communities who need it for growth have enough, and how much is enough
3. Benefit and equity in terms of accessing water – this is about local communities benefiting from the resource, the fairness of the allocation decisions, about reasonable access to water in the region, who gets the water, and whether those currently using water will experience a change

The social impacts from this proposal are both positive and negative. The positive impacts relate to the increased access to water in the south west afforded by an extended IWSS (eg., the Kemerton Industrial Estate in the short term, and the Busselton and Margaret River communities in the medium to longer term), the protection to local southwest use afforded by the principles of Reasonable Regional Need, and the ability to maintain current water restrictions for IWSS users in the face of potentially more severe restrictions.

Communities such as Augusta are unlikely to be affected by this proposal. Environmental and ecological impacts on the Blackwood, and in other specific locations, are envisaged to be minor and manageable and are not expected to change sense of place, or impact on social values, enjoyment or amenity of the River.

Negative social impacts may occur for Scott Coastal Plain farmers where the incremental constraint on water use presented by this proposal may have an impact on future development capability for their business. If this was to happen, there may be a small economic flow-on affect to the Shire of Nannup. However, given the shire’s track record in weathering the much larger implications of the fall-out of the Regional Forest Agreement, the scale of potential impact as a result of changing land use on the Scott Coastal Plain is expected to be small.
The implications for cultural water values are being explored with the Indigenous community and will be reported separately.

Social impacts during construction and operation also need to be addressed. Operationally there will be minimal social impacts and these can be addressed through good management practice by the Water Corporation. The construction phase would last for 18 months and significant impacts are likely to be experienced during this period. Impacts include:

- Impacts on individual landholders whose land is on the pipeline route. Access will need to be negotiated with each landholder prior to proceeding.
- Impacts on local communities due to the high influx of construction workers for extended periods of time. Positive benefits include the economic flow-on benefits into the community. Negative effects include potential social disruption.
- Impacts on local communities through the employment opportunities available to tradesmen and suppliers of relevant services.

The third phase of the study identified four monitoring and mitigation options:

In addition to monitoring with the aim of avoiding, minimising, rectifying and reducing social impacts, three major mitigation/enhancement actions are proposed. The first of these proposes direct discussion with communities or individuals impacted in some way by the proposal – for example, landholders on the proposed pipeline route. The other two recommendations are designed to increase the benefits the southwest communities will derive from the proposal in direct response to the perceptions of lack of equity and benefit discussed earlier.

1. Establishment of a mechanism for local monitoring. Community members have identified a number of aspects and areas that they believe need to be monitored. This could involve one overall group to work jointly with the Water Corporation in the collection, analysis and dissemination of data, or a series of groups with responsibility for monitoring of a particular location. Monitoring would include performance on social indicators in addition to environmental and ecological monitoring.

2. Program of direct dialogue with those impacted by the proposal including landholders on the proposed pipeline route and the Scott Coastal Plain. For example, construction impacts can be largely minimised through Water Corporation’s standard procedures which include discussion with landholders to plan construction activities to minimise disruption. The Scott Coastal Plain farmers who have been contacted during the sustainability evaluation process are not in favour of this proposal proceeding. The question though is whether there is a way of developing the proposal to achieve the envisaged benefits of water availability for the broader State-wide community while also achieving the goals of the Scott Coastal Plain farmers. This is worth exploring.
3. Commitment to support sustainability initiatives in the south west, to be administered by a Sustainability Board – a locally based group -- for the benefit of the south west community broadly. Criteria for support of initiatives would be developed jointly between the Water Corporation and members of the Sustainability Board, and may consider applications for projects that can demonstrate a sustainability rationale and would achieve benefits in environmental, economic and social terms. For example, water sensitive communities may apply for funding to support research into better land use management practices, or to fund local community development.

4. Facilitation of a community South West Water Futures Planning Study to develop the plan for future water needs in the south west and how they will be delivered. This is envisaged as a joint planning exercise to achieve the desired outcomes of clear expectations for water supply, assessment of alternative options, costing and feasibility, and timeframe. While it would take some time to achieve the outcomes, it would provide certainty to the South West, and would help to resolve the concerns of futures foregone, benefit and equity, and accommodating reasonable regional needs.

The Yarragadee must satisfy community expectations in terms of sustainability and minimal environmental impact for it to be accepted. The science is critical to this, and the results from the scientific studies have been used in determining level and extent of social impact. If the proposal proceeds, its implementation will be subject to ongoing scrutiny from the community, and will need to progress in close alignment with the community.

Recommended commitments to be made by the Water Corporation to assist in the management of social impacts, and to ameliorate negative, and enhance positive, social changes resulting from the proposal are:

1. Commitment to extensive consultation with landholders along potential pipeline corridor prior to finalisation of pipeline route.
2. Commitment to work jointly with small communities to manage the potential impacts of influx of construction workers during the construction phase.
3. Commitment to monitoring and transparent reporting of monitoring results. Includes commitment to monitor social commitments.
4. Commitment to open dialogue with the Scott Coastal Plain farmers and to offer to work jointly on agreed priority projects of benefit to both.
5. Commitment to support a Sustainability Initiative.
6. Commitment to facilitate and drive a SW Water Futures Planning Study.

These commitments are shown below in relation to each social factor and objectives specified at the start of the Sustainability Evaluation. Through these commitments, the social impacts resulting from the South West Yarragadee proposal will be able to managed, and the objectives specified will be able to be met.
<table>
<thead>
<tr>
<th>Social factors</th>
<th>Objectives</th>
<th>Summary of commitments in relation to factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lifestyle, amenity and recreational use and access</td>
<td>Water Corporation will determine, through community consultation, whether community members anticipate changes to lifestyle, amenity, or recreational use or access as a result of the proposal, to ensure that negative impacts do not occur from this project and to explore potential positive outcomes.</td>
<td>Commitment to monitoring and transparent reporting of monitoring results. Includes commitment to monitor social commitments.</td>
</tr>
<tr>
<td>Sense of place</td>
<td>Water Corporation will determine, through community consultation, whether community members with strong attachments to places and heritage values anticipate changes to those places and values as a result of the proposal, to ensure that negative impacts do not occur from this project and to explore potential positive outcomes.</td>
<td>As above.</td>
</tr>
<tr>
<td>Indigenous communities</td>
<td>Water Corporation will undertake to protect and avoid disturbance of Aboriginal heritage sites. The Corporation will explore potential positive outcomes for and with the indigenous communities.</td>
<td>To be determined and reported separately.</td>
</tr>
<tr>
<td>Existing and future needs</td>
<td>The proposal will contribute to meeting the existing and forecasted demand for public water supply in the IWSS and the south west under a range of possible future climate scenarios</td>
<td>Commitment to open dialogue with the Scott Coastal Plain farmers and work jointly on agreed priority projects of benefit to both. Commitment to develop a Sustainability Initiative. Commitment to facilitate and drive a SW Water Futures Planning Study.</td>
</tr>
<tr>
<td>Equitable access to water</td>
<td>Water Corporation will ensure that the water from the proposal is shared and available to the south west and IWSS regions.</td>
<td>Commitment to develop a Sustainability Initiative. Commitment to facilitate and drive a SW Water Futures Planning Study.</td>
</tr>
<tr>
<td>Development footprint</td>
<td>The construction and maintenance of infrastructure will cause minimal permanent disturbance to the community.</td>
<td>Commitment to extensive consultation with landholders along potential pipeline corridor prior to finalisation of pipeline route. Commitment to work jointly with small communities to manage potential impacts of influx of workers during the construction phase.</td>
</tr>
</tbody>
</table>
REFERENCES


Bureau of Land Management (n.d.) details to come


Industry Commission (1996) – *details to come*


Margaret River website, http://www.margaretriver.com


Pearson et al (1997) – details to come


Social Assessment Unit (1997) Social and forest values of the community within the West Australian RFA Region. Canberra, ACT: Department of Primary Industries and Energy.

Social Assessment Unit (1998) Social assessment for the WA Regional Forest Agreement. Perth, Western Australia: Western Australian Regional Forest Agreement.


APPENDIX 1

PHASE ONE RESPONDENTS

Augusta

Owen Jones, Augusta Community Development Association
Andy Rose, Augusta Community Development Association
Annie Belham, Miss Flinders Eco-Cruises
Simon Williams, Chamber of Commerce and manager of Supa-Valu
Russell Simpson, Augusta Tele-centre
Sue Woolley, Resident
Dr Jan Rabet, Lions Club and local GP
Ann Matei, East Augusta Resident
Sue Bissau, Augusta Tourist Centre
Bill Ipsen, Scott Coastal Plain farmer
Terry Hicks, SW Health Service

Busselton

Malcolm McAuley, Cardno BSD
Will Oldfield, Shire Environment Officer
Sue Wagner, Chamber of Commerce and small business operator
Steve Dorlandt, Chamber of Commerce and local bank manager
Peter Gordon, Chamber of Commerce and owner of Equinox Café
Martin Pritchardt, Dunsborough Busselton Environment Centre
Alison Cassanet, Dunsborough Busselton Environment Centre
Robin Flowers, CRG member, WAFF representative and local farmer
Phil and Greg Tickle, owners of Siesta Park Chalets
Shelley Pike, Shire
Ben and Len Letchford, farmers
Jane Manning, South West Development Commission
Helen Shervington, CRG member and Shire Councillor
David Reid, Sustainability Panel member and resident

Margaret River

Dr Mark Gibbard, Margaret River Education Campus
Nick Dornan, CRG member and local farmer
Merran Delaney, Shire Catchment Officer
Mersina Robinson, Shire manager of Strategic Planning
Kim Murray, MR Online
Ken Preston, Stocker Preston Real Estate
Rod Whittle, Leeuwin Environment Centre
Cameron O’Beirne, local consultant
Peter Lane, Cape to Cape Alliance
Ron Fraser, Margaret River Wine Industry Association  
Rod Davidson, local valuer  
Keith Scott, CRG member and farmer  
Jamie McAll, Shire President  
Steve Brake, Chamber of Commerce and Thompson McRobert Edgeloe  
Pauline McLeod, Augusta Margaret River Tourism Association  
Sally Hays, Shire officer  

**Bunbury**

Anne Donaldson, SW Health Service  
Greg Trevaskis, City of Bunbury  
Tony Brun, City of Bunbury and SW Catchments Council  
Clayton Hyder, Geographe Enterprises  
John Leyendekkers, Dekked Out Adventures  
Kerry Brown, CRG member and local resident  
Susan Hill, CRG member and local resident  
Rolf Stene, SW Chamber of Commerce  
Anthony Blee, city of Bunbury  
Alison Lannon, Business Enterprise Centre  
Dominique Van Gent, South West Development Commission  
Stuart Thompson, Thompson McRobert Edgeloe  
Kevin Coote, real estate agent  
Alan Birrell, Chamber of Commerce  
Graham Baesjou, CRG member and Bunbury Wellington Economic Alliance  
Fionnuala Hannon, Water and Rivers Commission  

**Nannup**

Barbara Dunnet, CRG member, Shire President and Scott Coastal Plain farmer  
Dave Boulter, Shire Councillor  
Margaret Bird, Shire Councillor  
Bob and Maggie Longmore, residents  
Shane Collie, Shire CEO  
Kurt and Avis Wiegele, residents and B&B owners along Blackwood  
Ann Hamilton, resident  
Chris and Mark Scott, orchardists  
Tom Busher, South West Development Commission  
John Dunnett, Scott Coastal Plain farmer  
Tom Fox, Scott Coastal Plain farmer  
Preston and Van Boley, West Scott Coastal Plain farmers  
Robert and Di Dunnet, Scott Coastal Plain farmers  
Don and Andrew McNab, Scott Coastal Plain farmers  
Craig and Jayda Foy, Scott Coastal Plain farmers  
Leanne Richards, Scott Coastal Plain farmer  
Jasper and Colleen Grugeon, Scott Coastal Plain residents
Jason and Damien Whild, Scott Coastal Plain farmers
Glen Lucason, electrical contractor and roo shooter
APPENDIX 2

LIST OF INTERVIEW QUESTIONS FOR PHASE ONE RESEARCH

General

1. Communities tend to go in cycles – development, growth, consolidation, new growth. Where is this community at now, and how do you see the future unfolding?

2. What is the community’s view of development?

3. What are its aspirations?

4. What are the top 5 current priorities/issues?

5. How does the community organise itself to tackle these needs and priorities?

6. What do you see as the solution to the current priorities/issues?

7. What current issues does the community have in relation to water? Where does water fit into the picture? Eg. water quality, licences.

Yarragadee

8. What are some of the community views about the Y. proposal?

9. What is the predominant view?

10. What’s driving this view? What are people concerned about?

11. Is there anything WC could do, in progressing this proposal, to lessen people’s concerns?

12. Could you see any potential benefits for this community from this proposal?

13. What do you see as the risks associated with this proposal, for your community?

14. Is there a level of risk that would be acceptable?

15. Would the notion of acceptability change if, and why:
   - The water was used for SW needs plus IWSS needs?
   - It was shown that there was enough water for everyone now and into the future?
   - It was shown that the proposal was sustainable?
   - It incurred only a low level of environmental impact?
It meant that people with existing groundwater allocations would not lose any of their water in the future?
It meant the region could profit by selling the water to Perth?

16. Interested in this notion of “reasonable regional needs” – new factor introduced. How would you define reasonable regional needs?

17. What is a regional regional need that should be satisfied before water goes to the IWSS?

18. Do you believe reasonable regional needs should take priority?

19. Does RRN equate to the public interest being satisfied?

20. If this project were to proceed, what conditions would you like to see put in place to make it acceptable? Conditions of consent?
  ➢ Monitoring
  ➢ Safeguards for the community?

21. What would give the community confidence that this was being well-managed?

22. What would you like to see done so that this community’s interests are protected?

23. What would you like to see done so that this community could derive some benefits from the project? What benefits could come from the project?

24. Who else would you recommend that I speak to so I get an accurate understanding of the community’s views?
APPENDIX 3

PHASE TWO RESPONDENTS

Annie Benham  Miss Flinders Boat Tours
Anne Hamilton  Blackwood River Canoeing
Neville Hamilton  Blackwood River Canoeing
Molloy Caravan Park  
Lester Mountford  Manager of Nannup Visitor Centre
Nannup Telecentre  
Gayle Raffan  Canoeing at Nannup
Robert Raffan  Canoeing at Nannup
Peter Vickridge  CALM Nannup Shopfront
APPENDIX 4

List of interview questions for phase two research

Activities

What do you think draws visitors to the South West?

What types of activities do visitors partake in? Eg., River walks, picnics, canoeing, boating, fishing

Where are the most popular locations on the River?

When is the peak season (when do they get on the River)? What happens in the down times?

Are there other water bodies in the area that draw visitors? Have you ever been down to Lake Jasper? Or visited the St. John Brook?

Visitor numbers

How many visitors do you think visit the area each year?

Have the number of visitors increased over the years?

Are activities currently being undertaken to increase the number of visitors?

(Nannup Visitor Centre: How many accommodation facilities exist? How many people are employed by tourism?)

Future of the Industry

What has been done with regards to marketing?

Are there any future developments in the works?

I know that there has been a drop in the thirty years due to drought, has this had an impact on the industry?

What impacts have recent road developments had on tourism?

Recreational Value

Do you partake in recreational activities on the River?
APPENDIX 5 – BACKGROUND INFORMATION COLLECTED ON EACH COMMUNITY IN STUDY

Augusta Community issues

In one-on-one interviews, several issue categories emerged as having current importance.

Economic issues
- Economic viability of town and making businesses more viable
- The need to create more jobs. Little investment currently in things that will produce work. Limited employment opportunities, much of it seasonal. Very difficult for anyone who’s a professional to get a job.
- Funding the required infrastructure. For example, parking in the town centre is an issue. There is not enough parking to accommodate all the tourists who come here over the 6-week summer holidays and 2-week Easter break. Augusta doesn’t have the economic base to do anything about it.
- Affordability and availability of land and housing. For example, the minimum price for land is $130,000 and for a house is $300,000. Lack of reasonable priced land and houses for young people. Unaffordability is due to lack of supply and shortage of land.
- Absentee land-owners put no money into the economy to produce jobs.

Health and vitality of the Blackwood River.
- They see the river and ocean as critically important to the plan to build tourism and eco-tourism. “Our future is in the water”.
- Building a tourism industry, particularly eco-tourism. Tourism is seen as the prime opportunity -- tourism will attract visitors, and will attract investors to develop infrastructure to cater for tourists. Their aim in developing the tourism industry is to get more people to come and to stay longer and spend more, so there’s a stronger funding base for needed infrastructure. Currently Augusta is not getting high-value tourists and the tourism that’s here doesn’t generate many jobs.
- Trying to get the marina proposal happening

Other hot issues
- Fighting the Government’s proposal to develop Kings Park
- Attracting a better share of Shire resources

Water quality
- Concern about water quality, particularly from the Water Wheel.

Bunbury Community issues

In one-on-one interviews, several issue categories emerged as having current importance.

Managing its growth
- Managing its transition from a port city and service centre for mining companies in the hinterland to a different industrial base and a tourism-based economy
- Attracting needed investment
- Engaging with the State Government to attract investment
- Desire to be sustainable but flexible, eg. consider land swaps to make things happen
• Rapid growth is putting serious pressure on resources.
• Over $4.2 billion investment in area with major projects over next 4 years including alumina and woodchipping, mining, mineral sands and agriculture. Need to capitalise on the growth – need to manage it.
• How to fund facilities for a population of the envisaged size. Ratepayers pay for facilities for the region of greater Bunbury.
• Managing its role as a commercial centre for the south west.
  Developing employment opportunities
• Skills shortages for labour, particularly in construction jobs. Up to 4,500 shortages.
  Managing rapid population growth
• Bunbury has a large influx of people who move here to work. This is spurring huge residential development in adjoining Shires. Rental properties are another area of growth.
• Lack of housing
  Tourism related issues
• Tourism – dramatic shortage of accommodation. Medium to long-term issue to be addressed. Large hotel chains need to have confidence in the future of the region.
• Proposed Nippon racetrack – if it goes ahead, will have a support team of 3,500 people to be accommodated.
• Revitalisation of CBD.
• Harbour development – environmental issues.
  Building on its strengths
• Good resources and amenities for local people as a result of good planning
• Diverse economy, solid industrial base, lots of diverse industries – all the eggs are not in one basket. Less affected by economic downturn
• The port and the waterways. Port is essential. Maintaining and strengthening the port is crucial for Bunbury and the region.
• Location – surrounded on three sides by water. Contributes to tourism, lifestyle and economic development.
• Culturally rich community – diversity of facilities and organisations; growing arts community; good sense of ‘who we are’; regional city
• Two hours from Perth
• Good educational and health facilities
• Having the ingredients for growth that will attract people.
  Other issues
• Better land use – non-availability of land is an issue. Future is greater density of land use.
• Water is important to development opportunities.

Busselton Community issues

Managing rapid growth
• Busselton is a seachange town, and the seachange is the biggest contributor to the economy.
• Growth is continuing – rapid growth of 6% p.a. for last 10 years. Busselton is projected to double in size in the next 20 years.
• The need to manage the growth. The visioning process will develop strategies for growth.
• Busselton is moving from a country town to a city, “living precariously on the edge of growth”, potentially on the cusp of “spiralling out of control”. Still has a country town feel. In transition.

Ensuring sustainability of development
• Sustainability of the rate of development. The Shire is opening up land, building houses, bringing people here, but no jobs. Therefore not sustainable.
• The need to create a more stable economic base to better support growth. The influx of new people to the town provides a false boon to the economy because it fuels the construction and service industries, but only for as long as the influx continues. The Council is trying to get a more stable economic base and more viable streams.
• Socio-economic base is not balanced – few people at the upper end.
• Infrastructure isn’t here to support major industry and there is no major industry here. Busselton is trying to find ways to attract industry and to develop year-round sustainable businesses.

Creating jobs
• Busselton is attracting people but doesn’t have the industrial base to offer employment. Shire wants to increase employment opportunities but this is not happening. Unlike Mandurah, Busselton is too far away from Perth to be a dormitory suburb. There are few jobs, yet businesses are struggling to get employees. Bunbury’s expansion in port and mining operations may underpin Busselton employment prospects. There is the opportunity for part-time, often low-paid jobs, but not full-time jobs.

Creating infrastructure to support population growth
• Need infrastructure. Infrastructure is lagging behind for the normal population – accentuated during the tourist season. Eg. Hospital caters for 6000, school is inadequate, weekly power outages, patchy mobile coverage. “We live with sub-standard services – don’t want this to happen to water also”.
• Service delivery and level of services eg specialist medical services, emergency department.

Housing
• Price of land and housing continue to escalate. Demand for housing exceeds supply. Every piece of land is sold before it comes on the market. Development in Busselton is growing with housing developments including those at Ambergate (12,000 homes), Vasse (5000 homes) and Provence near Airport (6000) over next 10 – 15 years.
• Affordability and availability of housing. Low-cost housing is not available. Lower income people may get squeezed out leading to an increasing social divide.

Environmental issues.
• The Council has just developed an environmental strategy because these issues are so important. Key environmental priorities for Busselton at present are:
  o Nutrification and pollution of waterways
  o Loss of diversity through clearing of vegetation for development
  o Coastal erosion – some areas have built too close to the coast
  o Pollution control – proper treatment of waste from industrial facilities
Potential issue – acid sulphate soils
Groundwater aquifers and issues of over-allocation of groundwater within the Shire – DoE is working to reduce that particularly in agricultural areas.

- Environmental priorities are seen by environmental groups in Busselton:
- Pressures on wetlands
- Destruction of natural environment to create housing
- Nutrification of the Vasse River and estuary
- Rivers not being fenced off from cattle
- The needs of agriculture with viticulture – biggest part of the economic base. Concerns of farmers relate to water licence security and drop in water table.

Margaret River Community issues

Planning and development issues:
- Managing its transition. It is an agricultural economy, with a tourist industry based around agriculture. Transitions include vineyards overtaking farming, lifestyle farms (eg. olives) displacing traditional farming, and tourism overall.
- Rate hikes
- Changes to the Town Planning Scheme – proposed changes will restrict size of subdivisions. May reduce flexibility of land use. Still under discussion. If subdivisions are allowed, every subdivision will need water.
- Has grown very fast. Current 5% p.a. growth rate. Growth of the town is a major issue. Recent community consultation has occurred about expansions into East Margaret River, and development at Cowaramup.
- Proposed new perimeter road. Currently the highway goes through the main street. Shire is looking at a bypass, but proposed route is contested. If traffic moves out of city centre, can then create a main street. Location of perimeter road, and how far east it goes, will determine the size Margaret River can grow to – 12,000 or 20,000.
- Tensions between development and keeping it how it is – finding a balance. More planning applications are received here than in Busselton, Rockingham and Mandurah.
- Absentee landlord issues.
- Time taken for development approvals. “Things don’t move quickly.”
- It’s a community where people are very conscious of what’s going on and want to have a say.
- The LNRSPPP limits urban development. Leads to very high demand for normal residential land in Margaret River. Land prices have doubled in past two years. Demand is outstripping growth which is pushing up prices.
- Huge housing boom happening. People buying up land for investment. House prices have been escalating for years. “Will reach a point where it’s over-developed. Then it’s a turn-off.” Margaret River could all be developed in next 10 years.
- Developers are looking to develop land Cape to Cape. Can’t clear any more land in the Shire, therefore physical limitations. Approximately 60% of Shire is Crown land, national parks and state forests. Of the remaining 40%, one quarter is urbanised, and the rest is rural. Not all the rural will be developed.

Development of the economy
• Seeking a diverse economy.
• Lots of skilled professionals here – could be opportunities to relocate businesses here.
• Intensive agriculture is a source of future employment.

Social issues:
• Affordable housing – its popularity has made it unaffordable for the traditional population or tradespeople on $300/wk. “People who create a sense of community can’t afford to be here.” Seachange people are renting properties, pushing up the prices. “Where do the people on lower incomes live?”
• Unemployment
• Single parent families – lack of family support services and social services
• Influx of people – holiday people, crayfishers – make the township inaccessible at times. Too many people on the weekends.
• New university to keep young people here, but otherwise, nothing for the kids to do.
• People come here for lifestyle, and because there are opportunities here. Seen as the sort of place where you can get things happening. There are only 5000 people in the town, and not many people with professional skills. These skills are starting to be needed.
• Not many jobs here. A lot of people work part-time – jobs in vineyard and hospitality industry tend to provide a low average weekly wage. The area attracts people but can’t sustain them, which leads to poverty. “People move here for the lifestyle, but can’t afford to live here.”
• Seen as a wealthy area but it isn’t – lots of poverty. Has extremes – alternative lifestyles; soup kitchen; generations have been on drugs.
• Disparate and divided community with a “Chardonnay set” on one side and “new Rockingham” on the other. Very politicised community. “A lot of wealthy people play down here”.

Environmental issues:
• Depletion of water table
• Pollutants going into the water
• Old growth forests
• Dams
• Development along coastline
• Capping the population
• Issue looming over sand mining at Lake Jasper. People environmentally politicised following the Beenup experience. Concerned that the same problem with acid sulphate soils may arise at Lake Jasper due to Yarragadee.

Water issues:
• Dams being built for aesthetics, and subsequent moves to control and license dams
• Impact of climate change in the area
• Water efficiency in the Shire
• Potential intensification of agricultural land use and water
• Water demand if rural subdivisions are allowed
• Water is an issue in wineries, particularly related to dams and the impact of dams on stream flows, within the context of reduced rainfall. Lots of focus in the community about dams and damage to the environment.
Other issues:
• Seven days a week trading.
• Crayfishing issue – dropping of craypots is attracting sharks

Nannup Community issues

Land availability for development
• Lack of land for development. 83 - 85% of land in Shire is Crown land. Five percent is already under blue gums which leaves 10 – 12% available for rates. Only opportunity to build rate base is through sub-division – will occur over time – can put on Crown land. Waiting to have land allocated by State Govt.
• Small rate base $700,000. Most rates are collected from rural, therefore the more people living and working in rural sector the better. Shire limited in what it can contribute to. Biggest constraint is Crown land.
• Current real estate boom. People are moving here for lifestyle and because it’s affordable. Other places – Margaret River, Busselton and Dunsborough – are out of people’s price range. About six semi-rural developments are on table at present. 45% increase in land prices in the past year – houses are snapped up and land is selling quickly.

Infrastructure needs:
• Large shire, small population – lots of infrastructure to cover from a small base eg. roads, road maintenance, bridges, water, disposal of waste, deep sewerage (started and stopped)
• State Govt gets royalties from timber but is not putting it back into the community, provides no funding in infrastructure in the town (similar to Port Hedland). Lots of plantations, but no money spent on roads infrastructure for haulage. Needs to be recognition of haul roads for eucalypts so Shire can get a share of the royalties. Shire is maintaining haulage roads, impost on ratepayers.
• However infrastructure is under strain due to growth.
• Not a survival issue. Nannup is doing well under difficult conditions.

Improved economic base:
• Improved economic base will occur by market forces alone. If don’t do anything, will occur anyway. Needs:
  o creating work – currently a high 8-10% unemployment rate
  o creating a diverse economy – not just relying on timber, also on tourism and agriculture
• If there were another 2 or 3 small businesses with 20-50 employees, would pick up the slack. Don’t have an industrial base. Looking at attracting industrial development – can’t offer incentives.
• Main industries: agriculture, timber and tourism.
• History is as a timber town. In the 1950s – 80s Nannup was a timber town. That changed during the 1980s and 90s. Nannup was used as a test following the RFA – negotiated a long-term supply contract for the mill with the State Govt. Timber mill is viable – 50 people employed – and timber is very important to the town.

Managing growth and maintaining a balance:
• Southern coast is starting to come under pressure because people want access.
• Resisting development “at all costs”
• Keeping the balance between industry, tourism, timber, horticulture and viticulture – maintaining population and a healthy community and Nannup as a good place to live.

**Social issues:**
• Employment – keeping young ones in town. Youth are a priority, to keep them here, keep them interested and find them work.
• Education – Year 10 they go off to Busselton
• Lack of availability of expertise in local workforce
• Health issues – local hospital and provision of services.
• Community is changing as the population increases. Influx of retired people moving in for lifestyle but need to maintain infrastructure for families and communities.
• In 2008 when Mowen Road is sealed, more people will come through to Nannup from Margaret River. Nannup is an escape for people – traffic has doubled in the past 4 years.
### APPENDIX 6 – HERITAGE FEATURES IN THE LOWER BLACKWOOD

<table>
<thead>
<tr>
<th>Name</th>
<th>List</th>
<th>Location</th>
<th>Description in database</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jalbarragup Bridge</td>
<td>State Register of Heritage Places (Status: Permanent 1998)</td>
<td>Jalbarragup Rd Blackwood River</td>
<td>Jalbarragup Bridge (ruin) is a now-disused turn of the century wooden river bridge. It is the only remaining turn of the century wooden bridge over the Blackwood River surviving in its original form, and one of few such bridges left in this State. Jalbarragup Bridge - was completed in 1900.</td>
</tr>
<tr>
<td>Scott National Park</td>
<td>Register of the National Estate (Status: Registered since 1978. Class: Natural)</td>
<td>Scott River Road, 5km north-east of Augusta</td>
<td>About 3270 ha along eastern bank of the Blackwood River including lower reaches of Scott River. Low lying open woodland. Swampy area provides unique habitat for mammals and breeding grounds for water fowl and other birds. Significant recreation area.</td>
</tr>
<tr>
<td>Brockman's Bridge</td>
<td>State Register of Heritage Places (Interim listing 2003) Statewide Lge Timber Str Survey (1998, Recommended RHP)</td>
<td>Cundinup-Dudinalup Rd Nr Nannup</td>
<td>A nine-span girder timber road bridge with timber stringers and driven piles constructed entirely of jarrah, built over the Blackwood River in 1907. It is the only intact timber bridge built in the first decade of the twentieth century over the Blackwood River surviving in its original form, one of a very small number of such bridges in Western Australia and one of the oldest in the State.</td>
</tr>
<tr>
<td>Darradup House</td>
<td>Municipal Inventory (1995, recommended for RHP)</td>
<td>Longbottom Rd Darradup</td>
<td>Darradup House is a timber framed and iron structure with a general ‘T’ shape floor plan with a gabled roof including prominent entrance, and surrounding skillion formed verandah. Building appears to have been extensively modified. Construction date: 1868 to 1900</td>
</tr>
<tr>
<td>Sues Road Bridge</td>
<td>Statewide Lge Timber Str Survey (1998 Recommended RHP)</td>
<td>Sues Rd 9km from Brockman Hwy turnoff</td>
<td>Bridge over the Blackwood. Construction date: 1966 to 1995</td>
</tr>
<tr>
<td>Old &amp; New Alexandra</td>
<td>National Trust (Status: classified)</td>
<td>Brockman Hwy and Blackwood</td>
<td>Construction date: 1897 and 1969 Year of demolition: 1990.</td>
</tr>
<tr>
<td>Bridges</td>
<td>Register of the National Estate (Status: Permanent 1980) Survey of 20th Cty Architecture (recommended for RHP 1988) Municipal Inventory (1996)</td>
<td>River.</td>
<td>Most of the old bridge was washed away by floods in 1982. The original bridge is no longer in existence save for a few spans at the northern abutment which are currently in a ruinous state.</td>
</tr>
<tr>
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</tr>
<tr>
<td>Blackboy</td>
<td>Classified by the National Trust</td>
<td>Scott River (not specific)</td>
<td>Place Type: Tree Register of significant trees as at June 1988</td>
</tr>
<tr>
<td>Black Point Geological Site</td>
<td>Register of the National Estate (Class: Natural: Status: Indicative place)</td>
<td>Black Point Rd D'Entrecasteaux National Park</td>
<td>The site includes two prominent clifed headlands on the south coast of the D'Entrecasteaux National Park, about 1.1 km apart. Both display spectacular exposures of the Bunbury Basalt. This formation forms part of the Perth Basin sequence and is rarely exposed at surface.</td>
</tr>
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</tbody>
</table>

APPENDIX 7 – PHASE ONE COMMENTS FROM RESPONDENTS

Summary of views on what would make a difference to how people feel about the proposal

Better community knowledge about what else Water Corp is doing to reduce water demand and improve efficiency, particularly with major water users
Local Councils should be leading the way with improved water use.
Real conservation of water should be a number one priority.
All homes should have a rainwater tank.
Use dual systems (eg. Shark Bay) to save consumption. Good opportunity to do that in the new housing developments happening now.
Grey water for gardens.
Our history is English gardens and lawns. We need a change in how we look at this.
Would like to know that the water is being used efficiently. Would like to see Water Corporation commitment through well-financed programs to reduce water use. Include agricultural water users, shires and recreational areas (eg. Golf courses) in this. Provide the right incentives to use water more efficiently.
Needs to be better community education on water appreciation, kids especially. Focus on how to manage your own water supply, keep costs down, be more efficient at home, recycle water, use of grey water. City people have traditionally not had to deal with water issues to the same extent.
Opportunity for individual advice on water conservation methods, to save me money.
A major step is to reduce the use of water by industrial users – huge use at minimal cost. If Water Corporation could be seen to be taking this seriously, it improves its credibility.
Target industry, particularly the horticultural industry.

Supply water to the SW solely, or at least before supplying it to Perth
Local needs should be the only ones accessing the Yarragadee. Do it in small bites, monitoring intensively. If Water Corp takes water, will do it in big bites.
Suggest you allow 40 farmers to take 1GL each. Could monitor the use and if there’s a problem cut down the use eg. pay compensation to 4 or 5. If water’s taken over a gradual period, monitoring would pick it up. With Water Corp, it’s too big – if there’s a problem, Govt wouldn’t allow it to solve the problem.
Has to be used here. Towns are on water restrictions.
Would allow for development. Would remove the fear of the unknown – fears about future development, and the affects of abstraction.
Would accept the decision if regional needs were accommodated – if there was enough for everyone.

Better communication about other options being considered by the Water Corp
Better use of storm run-off
Use saline water in Wellington Dam.
Tap Yarragadee from the sea
Have heard that the Yarragadee extends north of Perth to within 75 k of Geraldton. If so, why not tap the Yarragadee from Perth?
Skim winter flow off the Blackwood. Siphon off the top metre that’s normally wasted in winter through a series of pipes in the river banks and store in dams. Find a level above the level needed to maintain flora and fauna. Could be used to satisfy the towns along the Blackwood Warren.
Desalination project is independent of climate; Yarragadee is not.
Release water from irrigation.
More water storage.

Get Perth to manage its water needs sustainably without need to draw from elsewhere.
People in Perth should live within their means. Should do more to solve their own problems rather than creating problems somewhere else.
In 15 years’ time, if the SW was collapsing and Perth was dependent on the water, what would happen?
Perth hasn’t yet done all the things it could do to reduce water use.

Make sure the aquifer is well understood before any action is taken
Listen to what the science tells you.
Know the full implications before going in.
Would like the ability to have the science independently scrutinised.
Complete the technical appraisal – clearly define the spare capacity.

Better communication about the project itself
Paint a picture of what the options are – the whole picture, pros and cons, costs – so people can make an informed choice.
Regular public briefings and public information disseminated so people clearly understand the issues and the impacts
Provide constant reassurances that the right processes are being followed. Talk about what’s been and is being done.
WC will need to be extremely transparent – take a consistent line and make sure that community concerns are addressed.

Give something back to the Shires
Better quality water would be a real benefit to some people.
Looking after the environment is seen as critical to the future – tourism, national parks, Blackwood, coastline, eco-tourism wetlands projects – but there’s also huge pressure for development of the coastal strip. Is there an environment protection fund that Water Corp could establish that would help fund a balanced approach to environmental development?
Adopt a mining company approach – support the communities and their initiatives. Communities are asking: “What’s the benefit for us? Where’s the support for our community?”
Would want to see Water Corp contributing to the community – money and infrastructure. With most things, profits don’t stay here – everything goes away. “Raping and pillaging”.
Follow Victoria’s levy system – 1 cent per x number of litres. Levy is then provided back to those areas where the water came from, as a grant from government for tourism development, for community improvements. If the resource is diminished, at least some benefits flow back.
Initiate a pilot scheme to work with new communities in SW, or those with little infrastructure eg. Gracetown, through a place management approach to help them use water differently.
Use funds that would have gone into the more expensive supply options, and put in to programs to tackle water use and efficiency.
Mutual benefit, mutual obligation – make sure there’s a flow of benefit back to the SW.

Look at cost of water
Cost should reflect scarcity. Increased price would make a difference.
The only water value we have now is in transporting it. Notional value of zero.
People feel they have water rights – whether water is on the ground or in the ground. Shouldn’t be seen that way.
Our perception of how water can be used will be different in city and country. Govt is deciding to uphold Perth’s values on water use.