6. RIVER MURRAY DEVELOPMENT SURVEY

6.1 PURPOSE AND FORM OF SURVEY

The second survey undertaken comprised scenes with and without various forms of development and infrastructure. The purpose was to measure the community’s reaction to the visual impact of these developments and infrastructure to ascertain the significance of their effect on the riverine landscape. The results would assist the Department of Water, Land and Biodiversity Conservation (DWLBC) in its understanding of community attitudes and preferences.

Development and infrastructure on the River Murray included:

- Houseboats in various locations – along the river, in clusters, in marinas, and permanently occupied
- Shack developments, including scale, colour, associated structures, layout
- River infrastructure including jetties, moorings, pumping stations, retaining walls, beaches
- Town development as visible from the River
- Marina developments with housing and boats in canal-type subdivisions

The author worked closely with DWLBC in determining the location and nature of development options to be evaluated. Following discussion, the categories of developments shown in Table 6.1 were selected.

<table>
<thead>
<tr>
<th>Types of development</th>
<th>Scenarios</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Houseboats</td>
<td>14</td>
<td>17.5</td>
</tr>
<tr>
<td>House location</td>
<td>9</td>
<td>11</td>
</tr>
<tr>
<td>House form</td>
<td>17</td>
<td>21</td>
</tr>
<tr>
<td>House surrounds</td>
<td>9</td>
<td>11</td>
</tr>
<tr>
<td>Waterfront</td>
<td>17</td>
<td>21</td>
</tr>
<tr>
<td>Caravan &amp; recreation parks</td>
<td>10</td>
<td>12.5</td>
</tr>
<tr>
<td>Pumps</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>100.0</td>
</tr>
</tbody>
</table>

The survey used a nine grade rating scale rather than the usual 1 – 10 rating scale as it was based on a bi-polar scaling similar to a Likert scale. Participants were asked to grade their like-dislike in respect of each scene, scores of 1 – 4 being dislike and scores of 6 – 9 being like. The mean of the nine grade scale was 5 and the nine grades ensured that there was an equal number of grades on each side of the mean. In a 1 – 10 scale, the mean would be 5.5.

An alternative was a positive:negative scale but this was rejected as being potentially confusing to participants and the simpler like:dislike scale was adopted.

An Internet-based survey was undertaken and included information on participant interest in such developments, e.g. whether they were a

19. A Likert scale ranges from strongly disagree to strongly agree across a 5, 7 or 9 point scale.
shack owner, a skier or other River user, to determine whether their interest affected their ratings.

Analysis of the results examined the effects of development on ratings for the different types of development and also examined the influence of possible factors including landscape units, distance, familiarity with the area and the interest of the participant in the form of development. It identified which factors appeared to be significant in determining the level of impact on scenic quality.

The form of the survey is appended to this chapter.

6.2 CONDUCT OF SURVEY

The survey commenced on the Internet on 13 November 2006 and ended on 22 December. On 5 December, at which time the number of participants who had completed the survey was only 262, the survey was placed on the Government Intranet and the number quickly rose to over 1200.

![Figure 6.1 Cumulative daily participation in development survey](image)

By the end of the survey on 22 December, 1427 had participated in the survey.

6.3 DATA SET

The survey results were transferred to an Excel spreadsheet and the following steps taken to assemble the data set for analysis. Comments of participants at the completion of the survey were compiled into a separate MS Word document. Some 313 participants had provided comments and these are examined below.

In previous surveys, the ratings of participants who did not complete the survey were deleted. However in this survey, which used the bipolar 1 – 9 scale and in which each assessment was useful, only surveys which had failed to rate less than 20 scenes (i.e. 25% of total) were deleted. There were 168 such surveys.

After deleting these surveys, 1259 surveys or 88% of the total still remained.

The data set was then checked for strategic bias. Surveys with a mainly ratings of 1, 5 and 9 and near these numbers were examined. None were found to have taken a middle course and rated all scenes 5. There were 18 surveys whose mean was between 1 and 2 and the majority of ratings were 1. At the other end of the scale, there were 15 surveys with means of between 8 and 9 and the majority of ratings were 9. While these could be interpreted as strategic bias, inspection of these surveys indicated some other ratings as well. The choice of 1 or 9 could have simply reflected a generally liking or disliking for all the scenes of development. No surveys were therefore deleted because of strategic bias.

A sample of 1259 provided a confidence interval of 2.76; in other words, at a 95% confidence level, the responses would be +/- 2.76% of the true value. This was an excellent confidence interval and suggested that the results should be similar to the opinion of the broader community.

The data set was rearranged with the scenes in numerical order.

6.4 PARTICIPANT CHARACTERISTICS

(1) Location

Analysis of postcodes indicated that 75% of the participants were from the Adelaide Metropolitan Area, nearly 18% from elsewhere in South Australia, and 1.5% from elsewhere in Australia (Table 6.3). The number that participated from Riverland and lower Murray, Lakes and Coorong postcodes was 73 or 5.8%. The proportion of the participants from Adelaide was slightly more than the proportion of the State’s population who lived in Adelaide (73%).
Table 6.3 Location of participants

<table>
<thead>
<tr>
<th>Location</th>
<th>Number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Out of S.A.</td>
<td>19</td>
<td>1.5</td>
</tr>
<tr>
<td>River Murray</td>
<td>73</td>
<td>5.8</td>
</tr>
<tr>
<td>Adelaide</td>
<td>945</td>
<td>75.1</td>
</tr>
<tr>
<td>Rest of state</td>
<td>222</td>
<td>17.6</td>
</tr>
<tr>
<td>Total survey</td>
<td>1259</td>
<td>100.0</td>
</tr>
</tbody>
</table>

(2) Mean participant ratings

The means of each participant’s ratings plotted on a histogram indicated a close to normal distribution (Figure 6.2). The overall mean on the 1 – 9 scale was 4.77 and the standard deviation (SD) was 1.33. The points were close to the diagonal line on the QQ plot which indicated a close to normal distribution (Figure 6.3).

Table 6.4 Age vs gender

<table>
<thead>
<tr>
<th></th>
<th>18 –</th>
<th>25 –</th>
<th>45 –</th>
<th>&gt; 65</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>35</td>
<td>282</td>
<td>353</td>
<td>42</td>
<td>712</td>
</tr>
<tr>
<td>Male</td>
<td>11</td>
<td>180</td>
<td>340</td>
<td>16</td>
<td>547</td>
</tr>
<tr>
<td>Total</td>
<td>46</td>
<td>462</td>
<td>693</td>
<td>58</td>
<td>1259</td>
</tr>
</tbody>
</table>

Table 6.5 Age vs education

<table>
<thead>
<tr>
<th>No Qualification</th>
<th>18 –</th>
<th>25 –</th>
<th>45 –</th>
<th>&gt; 65</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diploma or</td>
<td>22</td>
<td>161</td>
<td>170</td>
<td>10</td>
<td>363</td>
</tr>
<tr>
<td>Certificate</td>
<td>14</td>
<td>135</td>
<td>239</td>
<td>18</td>
<td>406</td>
</tr>
<tr>
<td>Degree</td>
<td>5</td>
<td>114</td>
<td>171</td>
<td>18</td>
<td>308</td>
</tr>
<tr>
<td>Higher Degree</td>
<td>5</td>
<td>52</td>
<td>113</td>
<td>12</td>
<td>182</td>
</tr>
<tr>
<td>Total</td>
<td>46</td>
<td>462</td>
<td>693</td>
<td>58</td>
<td>1259</td>
</tr>
</tbody>
</table>

Table 6.6 Age vs birthplace

<table>
<thead>
<tr>
<th>Born in Australia</th>
<th>18 –</th>
<th>25 –</th>
<th>45 –</th>
<th>&gt; 65</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>43</td>
<td>414</td>
<td>554</td>
<td>49</td>
<td>1060</td>
<td></td>
</tr>
<tr>
<td>Not born in Aust.</td>
<td>3</td>
<td>48</td>
<td>139</td>
<td>9</td>
<td>199</td>
</tr>
<tr>
<td>Total</td>
<td>46</td>
<td>462</td>
<td>693</td>
<td>58</td>
<td>1259</td>
</tr>
</tbody>
</table>

(3) Participant characteristics

Tables 6.4, 6.5 and 6.6 summarise the characteristics of the survey participants. These Tables indicate that more females (57%) than males participated. 92% were concentrated in the 25 – 64 age span, the majority were tertiary educated (71% with diploma or degree), and the majority were born in Australia (84%).

These percentages are similar to those obtained in the scenic quality survey although the proportion of tertiary educated in the development survey was somewhat lower (71% compared with 86% previously).

Table 6.4 Age vs gender

<table>
<thead>
<tr>
<th></th>
<th>18 –</th>
<th>25 –</th>
<th>45 –</th>
<th>&gt; 65</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>35</td>
<td>282</td>
<td>353</td>
<td>42</td>
<td>712</td>
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<td>Total</td>
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<td>462</td>
<td>693</td>
<td>58</td>
<td>1259</td>
</tr>
</tbody>
</table>

Table 6.5 Age vs education

<table>
<thead>
<tr>
<th>No Qualification</th>
<th>18 –</th>
<th>25 –</th>
<th>45 –</th>
<th>&gt; 65</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diploma or</td>
<td>22</td>
<td>161</td>
<td>170</td>
<td>10</td>
<td>363</td>
</tr>
<tr>
<td>Certificate</td>
<td>14</td>
<td>135</td>
<td>239</td>
<td>18</td>
<td>406</td>
</tr>
<tr>
<td>Degree</td>
<td>5</td>
<td>114</td>
<td>171</td>
<td>18</td>
<td>308</td>
</tr>
<tr>
<td>Higher Degree</td>
<td>5</td>
<td>52</td>
<td>113</td>
<td>12</td>
<td>182</td>
</tr>
<tr>
<td>Total</td>
<td>46</td>
<td>462</td>
<td>693</td>
<td>58</td>
<td>1259</td>
</tr>
</tbody>
</table>

Table 6.6 Age vs birthplace

<table>
<thead>
<tr>
<th>Born in Australia</th>
<th>18 –</th>
<th>25 –</th>
<th>45 –</th>
<th>&gt; 65</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>43</td>
<td>414</td>
<td>554</td>
<td>49</td>
<td>1060</td>
<td></td>
</tr>
<tr>
<td>Not born in Aust.</td>
<td>3</td>
<td>48</td>
<td>139</td>
<td>9</td>
<td>199</td>
</tr>
<tr>
<td>Total</td>
<td>46</td>
<td>462</td>
<td>693</td>
<td>58</td>
<td>1259</td>
</tr>
</tbody>
</table>

(4) Comparison of participants with South Australian community

The main purpose of gathering respondent data was to ascertain the representativeness of the survey participants compared with the South Australian community.

Age

The age distribution of participants indicated a greater proportion of middle age and sub-
stantially fewer older and younger participants (Table 6.7). The differences between the participants and the South Australian community were statistically significant: $\chi^2 = 541.9$, df = 3, $p = 0.000$.

Table 6.7 Age distribution of participants

<table>
<thead>
<tr>
<th>S.A. %</th>
<th>Survey %</th>
<th>Internet access %</th>
</tr>
</thead>
<tbody>
<tr>
<td>18 – 24</td>
<td>16.4</td>
<td>3.6</td>
</tr>
<tr>
<td>25 – 44</td>
<td>35.9</td>
<td>36.7</td>
</tr>
<tr>
<td>45 – 64</td>
<td>29.7</td>
<td>55.0</td>
</tr>
<tr>
<td>&gt; 65</td>
<td>18.0</td>
<td>4.6</td>
</tr>
</tbody>
</table>

Table 6.10 Educational attainment of participants

<table>
<thead>
<tr>
<th></th>
<th>S.A. %</th>
<th>Survey %</th>
<th>Internet access %</th>
</tr>
</thead>
<tbody>
<tr>
<td>No qual.</td>
<td>68.1</td>
<td>14.5</td>
<td>48</td>
</tr>
<tr>
<td>Dip/Cert</td>
<td>21.2</td>
<td>32.2</td>
<td>56</td>
</tr>
<tr>
<td>Degree</td>
<td>8.2</td>
<td>28.8</td>
<td>88</td>
</tr>
<tr>
<td>Higher degree</td>
<td>2.5</td>
<td>24.5</td>
<td></td>
</tr>
</tbody>
</table>

Note: Internet users covered the whole of Australia. Internet access source: ABS, 2004

Summary of participant characteristics

Overall the participants were more middle aged and better educated, with a higher proportion of females, and with more born in Australia than the general South Australian community.

Although the survey participants differed significantly from the community, as for the scenic quality survey, an examination of the ratings across the participant characteristics again showed little variation (Figure 6.4a). Figure 6.4b exaggerates the scale to highlight the differences. The range of differences was $+/-0.25$ from 4.5 to 5.0. Thus the differences in participant characteristics had no appreciable influence on the results.

(5) Participant familiarity with region

Participants were asked to rate their familiarity with the region covering the following areas:

- Upper Murray – Border to Morgan
- Lower Murray - Morgan to Wellington
- Lakes Alexandrina and Albert
- Goolwa and Hindmarsh Island
- Coorong

Table 6.11 and Figure 6.5 summarise the familiarity of participants with various parts of the region

Table 6.11 Familiarity with region

<table>
<thead>
<tr>
<th></th>
<th>Not familiar</th>
<th>Slightly familiar</th>
<th>Very familiar</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coorong</td>
<td>293</td>
<td>654</td>
<td>272</td>
<td>1219</td>
</tr>
<tr>
<td>Goolwa</td>
<td>153</td>
<td>620</td>
<td>446</td>
<td>1219</td>
</tr>
<tr>
<td>Lakes</td>
<td>343</td>
<td>663</td>
<td>194</td>
<td>1200</td>
</tr>
<tr>
<td>Lower Murray</td>
<td>220</td>
<td>715</td>
<td>290</td>
<td>1225</td>
</tr>
<tr>
<td>Upper Murray</td>
<td>315</td>
<td>657</td>
<td>258</td>
<td>1230</td>
</tr>
</tbody>
</table>

Note: the totals vary slightly because not all participants answered this question.
Figure 6.4a Mean average ratings by participant characteristics

Figure 6.4b Mean average ratings by participant characteristics – exaggerated scale

Figure 6.5 Familiarity with River Murray, Lakes and Coorong
As expected, the most familiar areas were those closest to Adelaide – the Goolwa area and Lower Murray. The more distant areas – upper Murray and Coorong – were less familiar. However, although close to Adelaide, Lakes Alexandrina and Albert had the lowest number of participants who were very familiar with this area.

Many participants were very familiar with more than one area in the region. Over 200 were very familiar with three or more areas, and five were very familiar with all five areas (Table 6.12).

Table 6.12 Participant familiarity with different areas in region

<table>
<thead>
<tr>
<th>No. of Areas</th>
<th>Participants</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>343</td>
<td>46.4</td>
</tr>
<tr>
<td>2</td>
<td>195</td>
<td>26.4</td>
</tr>
<tr>
<td>3</td>
<td>113</td>
<td>15.3</td>
</tr>
<tr>
<td>4</td>
<td>52</td>
<td>7.0</td>
</tr>
<tr>
<td>5</td>
<td>36</td>
<td>4.9</td>
</tr>
</tbody>
</table>

(6) Participant activities

Participants were asked the following questions about their use of the Murray:

- Are you a shack owner?
- Are you a water skier or boatie?
- Have you used a houseboat on the River?
- Do you go fishing on the River?
- Do you live on or near the River?

The results (Table 6.13) indicated that 43% of the participants had used a houseboat, which was surprisingly high.

Only 5% were shack owners and as the question was preceded by the statement: Questions about your use of the Murray, this was taken to refer to ownership of shacks on the River, not the coast. A surprisingly high 111 lived on or near the River, which contrasted with the 73 participants whose postcodes were within the region (Table 6.3).

Table 6.13 Participation in activities

<table>
<thead>
<tr>
<th>Activity</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fishing on River</td>
<td>335</td>
<td>26.6</td>
</tr>
<tr>
<td>Houseboat on River</td>
<td>539</td>
<td>42.8</td>
</tr>
<tr>
<td>Shack owner</td>
<td>67</td>
<td>5.3</td>
</tr>
<tr>
<td>Skier/boatie</td>
<td>262</td>
<td>20.8</td>
</tr>
<tr>
<td>Live on or near River</td>
<td>111</td>
<td>8.8</td>
</tr>
</tbody>
</table>

Note: % out of 1259

The questions concentrated on the River as a ‘catch-all term’ for the region but the number who took this as not referring, say to the Goolwa area, was unknown.

Many participants were involved in a number of activities. Table 6.14 shows that although 40% of the participants engaged in none of the activities, there were many who were active across a range of pursuits, including five who engaged in all five activities.

Table 6.14 Number of activities per participant

<table>
<thead>
<tr>
<th>Nos. of activities</th>
<th>Nos. participants</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>506</td>
<td>40.2</td>
</tr>
<tr>
<td>1</td>
<td>383</td>
<td>30.4</td>
</tr>
<tr>
<td>2</td>
<td>226</td>
<td>18.0</td>
</tr>
<tr>
<td>3</td>
<td>102</td>
<td>8.1</td>
</tr>
<tr>
<td>4</td>
<td>37</td>
<td>2.9</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td>0.4</td>
</tr>
<tr>
<td>Total</td>
<td>1259</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 6.15 cross matches the familiarity with each area against the activities undertaken in that area. It indicates:

- For houseboaters, the most familiar area was the upper Murray followed by Goolwa and the Lower Murray.
- Shack owners were very familiar with the lower Murray but their knowledge of other areas was virtually non-existent.
- Skiers and boaties were similar to shack owners (often the same people) – very familiar with the lower Murray but knew little of other areas.
- Fishers knew all areas well; most known was Goolwa/Hindmarsh Island, followed by the lower Murray, upper Murray, Coorong and Lakes.
- People who lived on or near the River were most familiar with the upper Murray and the Coorong.

The lower Murray stands out as the area in which most activity occurred and was therefore the most familiar across most activities.

Further analysis of these data on familiarity could be useful for tourism agencies.

(7) Internet access

Of the 1259 participants, 75% used broadband and the remaining 25% used dial-up connections to the Internet.
Table 6.15 Familiarity with areas by activity

<table>
<thead>
<tr>
<th>Region/Activity</th>
<th>Not familiar</th>
<th>Slightly familiar</th>
<th>Very familiar</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Upper Murray</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Houseboats</td>
<td>5</td>
<td>36</td>
<td>18</td>
<td>59</td>
</tr>
<tr>
<td>Shack owner</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Skier/boatie</td>
<td>4</td>
<td>9</td>
<td>4</td>
<td>17</td>
</tr>
<tr>
<td>Fishing</td>
<td>36</td>
<td>181</td>
<td>112</td>
<td>335</td>
</tr>
<tr>
<td>Live on/near river</td>
<td>2</td>
<td>4</td>
<td>10</td>
<td>16</td>
</tr>
<tr>
<td><strong>Lower Murray</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Houseboats</td>
<td>4</td>
<td>42</td>
<td>12</td>
<td>59</td>
</tr>
<tr>
<td>Shack owner</td>
<td>1</td>
<td>25</td>
<td>40</td>
<td>67</td>
</tr>
<tr>
<td>Skier/boatie</td>
<td>23</td>
<td>132</td>
<td>101</td>
<td>270</td>
</tr>
<tr>
<td>Fishing</td>
<td>21</td>
<td>178</td>
<td>129</td>
<td>335</td>
</tr>
<tr>
<td>Live on/near river</td>
<td>2</td>
<td>8</td>
<td>6</td>
<td>16</td>
</tr>
<tr>
<td><strong>Lakes</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Houseboats</td>
<td>13</td>
<td>36</td>
<td>8</td>
<td>59</td>
</tr>
<tr>
<td>Shack owner</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Skier/boatie</td>
<td>4</td>
<td>9</td>
<td>1</td>
<td>17</td>
</tr>
<tr>
<td>Fishing</td>
<td>85</td>
<td>165</td>
<td>70</td>
<td>335</td>
</tr>
<tr>
<td>Live on/near river</td>
<td>3</td>
<td>9</td>
<td>2</td>
<td>16</td>
</tr>
<tr>
<td><strong>Goolwa</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Houseboats</td>
<td>7</td>
<td>36</td>
<td>16</td>
<td>59</td>
</tr>
<tr>
<td>Shack owner</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Skier/boatie</td>
<td>4</td>
<td>11</td>
<td>2</td>
<td>17</td>
</tr>
<tr>
<td>Fishing</td>
<td>37</td>
<td>158</td>
<td>130</td>
<td>335</td>
</tr>
<tr>
<td>Live on/near river</td>
<td>2</td>
<td>10</td>
<td>4</td>
<td>16</td>
</tr>
<tr>
<td><strong>Coorong</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Houseboats</td>
<td>13</td>
<td>31</td>
<td>15</td>
<td>59</td>
</tr>
<tr>
<td>Shack owner</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Skier/boatie</td>
<td>5</td>
<td>8</td>
<td>3</td>
<td>17</td>
</tr>
<tr>
<td>Fishing</td>
<td>83</td>
<td>160</td>
<td>83</td>
<td>335</td>
</tr>
<tr>
<td>Live on/near river</td>
<td>3</td>
<td>5</td>
<td>8</td>
<td>16</td>
</tr>
</tbody>
</table>

Note: Excludes blank returns

6.6 COMMENTS BY PARTICIPANTS

The comments of participants were extracted prior to the deletion of certain incomplete surveys. They numbered 313 which was nearly 22% of all participants. The complete comments are included on the attached CD.

As many commented on several subjects, the total number of comments was 367. The majority (44%) were about housing and development of the River including the waterfront (Figure 6.6).

Comments about the survey followed and then comments about various uses – houseboats and marinas and pumps. Concerns about lack of public access and the need to maintain natural areas and naturalness of the riverine environment were prominent.

Figure 6.6 Classification of comments on development survey

The following extracts from the comments provide a flavour of them.
Overall development issues

I have previously completed surveys on the coastlines and on wine growing country. Neither were as remotely depressing as this catalogue of sickness, disease, despoliation. Every owner, tenant or trespasser has been allowed to do their individual, unregulated worst. Everything goes. If there is a planning authority its members should be subject to public disgrace. It needn't be like this.

The River Murray should have been treated as the fantastic living body that it used to be. Instead we have sculptured it to suit our selfish purposes rather that sit back and appreciate its natural beauty. We should not have tried to shape it and mould it be how we wanted it to be just to suit our selfish lifestyle. By doing this, we have just created a slow, agonising inevitable death for it.

I prefer the scenes where the natural environment has been largely unspoiled, unremoved or replaced & foreign flora hasn't been introduced. Ideal environment is where dwellings have been developed to meld with the natural environment.

In my view, the reason that we are in such bother now is that people have always sought to think about the river sectorally - irrigation, boating, water supply etc - rather than thinking about the whole system. The houseboats and dilapidated moorings, lack of trees, and vast expanses of green grass and /or willows should serve to remind us that the River will die unless we start thinking about it completely differently.

After doing this survey I realise that white man killed the river. It sticks out like the proverbial that they are really like white ants and they eat and destroy everything in their path!

What a mess we are making of the river! How can we ever hope to clean it up when we are living either on it or so close to it. Why are these people allowed to live so?

Once upon a time the river was a place to have holidays and enjoy going camping or owning a small, holiday shack. Now days, people want two story houses, they are not satisfied with small shacks. They want all the luxuries of home at their holiday house. People want to get away from it all on a houseboat so they join the thousand other people doing the same thing (they may as well go down to the Marina and sit on a boat there the way the houseboats are sandwiched in, cheek by jowl on the river. The river is dying and cannot support the increase in of houseboats, houses and shacks which are crowding the banks and the river itself. The river can no longer breath, its banks are built up, walled up and generally being degraded to such an extent that it is turning into a canal such as they have in France or England, rather than a river. Wake up South Australia - you cannot keep doing this and hope our river will survive !!!!

It is important that there is a balance between nature and the common people. Neither myopic environmentalism or opportunist profileering development should be allowed to predominate.

Housing

…the new wave of McMansions on cliffs is a worry.

…no ‘flavour’ of australiana incorporated in the housing style (two story mcmansions)

Any linear development on the river is an eyesore and the closer to the banks it is the worse it is. Grassed lawns etc instead of natural riparian vegetation is a disaster. The more dense the man made intrusions the worse it is.

I believe the (Teal Flat) area has been over-developed by the McMansions now fronting the river and backing onto the lagoon, everyone with its own landing! (former shack owner in area when it was open to public)

Some of these scenes could easily have been the Gold Coast/other Canal Estates - it'd be wise for the River community to establish what sort of character it wanted to achieve and avoid these types of 'generic' development.

Too much development is too close to the river.

There should be no dwellings below the 1956 flood level and all buildings should be sited at least 250 metres from the riverbank.

The worst scenes involve the pump houses and any other residential/holiday developments that are close to the river and where there is lawn reaching right up to the river. I can imagine significant quantities of fertiliser and lawn clippings would find its way into the river system over time.
If buildings/dwellings are allowed near the river they should only be single storey, set back a 75m+ from the bank, or wherever has the greatest potential to protect the natural flora and fauna. Buildings should be subtly coloured to tone with the environment. There should be a strong emphasis on eco designed buildings.

**NO MORE HOMES OR SHACKS ON OUR RIVER PLEASE** - We don't want a few privileged people polluting and draining our river for their own recreational activities.

It just seems that shack/house/mansion owners have gone out of their way to have their places stand out like a sore thumb.

Natural vegetation with low-rise buildings further away from the embankment was preferable.

The newer developments appear to be more extravagant, more exclusionary, less concern about affect on amenity of others.

As a shackie I don’t mind the shacks that are a reasonable distance from the River and are kept in a tidy state. Retaining the riverbanks should be allowed without being unreasonably obtrusive. Jetties and floating pontoons should be kept to an absolute minimum as some of the structures are overindulgent.

..shacks should be set well back from the bank and blend in with the surrounding landscape

Wow we really have made the river look like suburbia…….

Two storey "shacks" should be discouraged and built back off the waters edge with tree lined frontage and neat well kept lawns and sturdy modern and lasting boat jetties.

**Waterfront**

Any landings for boats should be of a consistent standard and be a shared facility so that the banks are not littered with numerous, ugly structures that are currently in place

The rock walls are terrible, rock is a natural product but give me timber piles and boardings any day as rock is never a formation on floodplain side of the river.

Every attempt should be made to keep the edges of the river as natural as possible including buffer zones and vegetation screening for houses. Community boat ramps/jetties should be installed rather than heaps of individual jetties.

I prefer to have natural river banks, lots of native bush on the bank for stability.

Like to see the river banks with native vegetation only and for development to be obscured from view by native vegetation.

…there should be very strict guidelines as to how the river frontage should be maintained.

**Houseboats and marinas**

Backwater marinas for permanent house boats etc is a good option.

There should be a limit to the number and size of house boats. Some are the size of floating hotels and dominating the scenery far too much.

I think the house boats look like a car park on water - why so many together and so ugly and all painted white - smaller with canoe lines/colours maybe or painted in Aboriginal art designs/tones.

Houseboat marinas should be in back water away from main stream and same for housing developments on domestic waterways.

House boats used for short holidays that use central bilge disposal areas are fine, but the newer luxury boats with spas discharge the grey water into Murray.

**Naturalness and natural areas**

Initial questions did not allow passive use of the river, walking, bird watching, canoeing - noise makes a big difference.

I love the Murray. It is at its best when least impacted by man. I love to kayak the quiet backwaters. I dislike the opulent, development along the waters edge with the "keep off" attitude. The Murray belongs to us all.

**Public use**

Strictly speaking the legislation states that public access is available for a margin from the water line in many of these so called shack environs the public are abused soundly if you so much as set foot on their sacred land. Mine Mine Mine
The river should reflect public access, not private wealth.

I didn’t like the river frontage being claimed by selfish shack owners …

…there should not be new development on the riverbank at the expense of good open space for public use.

I was horrified to signs adjacent the public road (Teal Flat) warning that the area is now private property and we would be trespassing.

I have recently completed a paddle from Kingston Bridge to Blanchetown in a kayak & are concerned at the amount of river that has been taken for exclusive use of shack dwellers with fences to the water. These restrict the 'public' from camping & houseboats docking space to tie up at night.

I prefer to see developments such as parks, common use areas eg picnic areas and landings etc set aside for common public use and access, not sole ownership or even the implied possession of waterfront by individuals or corporations. Building too close to the edge inhibits public use of the waterfront even if there is technically public access.

The established practice of developments right up to the river bank must stop. Everyone must have access to all sections of the river bank, not just a select few who then prohibit others from using the banks. You can't claim the beach so why can they claim the bank of our river.

I find the areas to be sectioned off for personal ownership obscene. Access by the public is excluded by this elitist selfish development.

I hate how shack/holiday house owners have exclusive use of river frontage either legally or illegally to the exclusion of others.

Comments on individual scenes are summarised in Section 6.9. They are considered together with the above comments at the end of this chapter.

6.6 OVERALL RATINGS

The mean rating was 4.76 (1 – 9 scale) which was nearly the same as the median of 4.68. The standard deviation was 1.01. The ratings ranged from 2.78 to 7.53.

The histogram (Figure 6.7) indicated that the distribution was skewed toward the lower figures which represent the dislike end of the bipolar scale. The QQ plot indicated that the distribution was reasonably normal apart from the higher ratings (Figure 6.8). The mid-rating was 5. Over half the ratings were 4, below the median (Figure 6.9).

Figure 6.7 Histogram of development means

Figure 6.8 QQ plot of development means

The histogram (Figure 6.7) indicated that the distribution was skewed toward the lower figures which represent the dislike end of the bipolar scale. The QQ plot indicated that the distribution was reasonably normal apart from the higher ratings (Figure 6.8). The mid-rating was 5. Over half the ratings were 4, below the median (Figure 6.9).
6.7 CATEGORY RATINGS

The scenes contained in the development survey were selected to represent a range of development situations as described in section 6.1. The analysis here covers:

- House location
- House form
- House surrounds
- Waterfront
- Houseboats
- Caravan/recreation areas
- Pumps

The median of the 1 – 9 scale is 5 which represented a neutral view.

<table>
<thead>
<tr>
<th>Rating</th>
<th>Disliked</th>
<th>Neutral</th>
<th>Liked</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Slightly disliked</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Fairly disliked</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Greatly disliked</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Very greatly disliked</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Slightly liked</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Fairly liked</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Greatly liked</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The following indicates the degree of liking or disliking.

These are used below to describe the degree of liking or disliking in the analysis of ratings.

(1) House location

Scenes were selected of houses on the cliff top, above the floodplain, and on the floodplain (Table 6.16).

Table 6.16 House location ratings

<table>
<thead>
<tr>
<th>Location</th>
<th>Scene #</th>
<th>Rating</th>
<th>Group mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cliff top</td>
<td>22</td>
<td>4.75</td>
<td>4.46</td>
</tr>
<tr>
<td></td>
<td>25</td>
<td>4.17</td>
<td></td>
</tr>
<tr>
<td>Above floodplain</td>
<td>33</td>
<td>4.77</td>
<td>4.72</td>
</tr>
<tr>
<td>Floodplain</td>
<td>19</td>
<td>4.75</td>
<td></td>
</tr>
<tr>
<td></td>
<td>73</td>
<td>4.92</td>
<td></td>
</tr>
<tr>
<td></td>
<td>74</td>
<td>5.25</td>
<td></td>
</tr>
<tr>
<td></td>
<td>75</td>
<td>4.72</td>
<td>4.91</td>
</tr>
</tbody>
</table>

Houses on the floodplain rated the highest followed by those above the floodplain with cliff top houses the least preferred. The ratings were fairly close, a range of 1.08 from 4.17 to 5.25. The differences in ratings between the groups of scenes were not significant: F = 1.94, df 2, 7, p = 0.24.
(2) **House form**

A variety of housing styles were included covering canal subdivisions, dense housing, housing well set back from the waterfront versus housing close to the waterfront.

Overall the means for the various housing forms ranged from 4.13 to 5.25, a range of 1.12 (Table 6.17) and the differences between the groups of scenes were not significant: $F = 2.03$, df 4, 16, $p = 0.15$.

<table>
<thead>
<tr>
<th>House form</th>
<th>Scene #</th>
<th>Rating</th>
<th>Group mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canal</td>
<td>39</td>
<td>4.74</td>
<td></td>
</tr>
<tr>
<td></td>
<td>67</td>
<td>3.45</td>
<td></td>
</tr>
<tr>
<td></td>
<td>68</td>
<td>4.10</td>
<td></td>
</tr>
<tr>
<td></td>
<td>35</td>
<td>4.42</td>
<td>4.18</td>
</tr>
<tr>
<td>Dense</td>
<td>63</td>
<td>3.73</td>
<td>4.13</td>
</tr>
<tr>
<td></td>
<td>46</td>
<td>4.53</td>
<td></td>
</tr>
<tr>
<td>Setback</td>
<td>27</td>
<td>4.78</td>
<td></td>
</tr>
<tr>
<td></td>
<td>80</td>
<td>6.12</td>
<td></td>
</tr>
<tr>
<td></td>
<td>45</td>
<td>5.45</td>
<td></td>
</tr>
<tr>
<td></td>
<td>70</td>
<td>4.63</td>
<td>5.25</td>
</tr>
<tr>
<td>Subdivision</td>
<td>65</td>
<td>4.60</td>
<td>4.60</td>
</tr>
<tr>
<td>Waterfront</td>
<td>26</td>
<td>3.89</td>
<td></td>
</tr>
<tr>
<td></td>
<td>44</td>
<td>4.35</td>
<td></td>
</tr>
<tr>
<td></td>
<td>57</td>
<td>4.25</td>
<td></td>
</tr>
<tr>
<td></td>
<td>62</td>
<td>5.33</td>
<td></td>
</tr>
<tr>
<td></td>
<td>66</td>
<td>5.15</td>
<td></td>
</tr>
<tr>
<td></td>
<td>71</td>
<td>4.47</td>
<td>4.57</td>
</tr>
</tbody>
</table>

The canal subdivisions averaged 4.18 which was among the lowest of the housing locations, and indicated slight dislike. Particularly disliked were multistorey apartments adjacent to the marina (see above).

Dense housing developments were represented by two scenes, the ratings of which varied over one unit (#63 3.73 and #46 4.53). Scene 46 included water and rated higher than scene 63 without water. The mean was 4.13 which represented slight dislike.

The distance by which houses were set back from the water was represented by four scenes. These rated from 4.78 to 6.12 with a mean of 5.25, which represented slightly liked.
Subdivisions were represented by only one scene which was of two-storey American barn type houses. The scene rated 4.60 which was in the slightly disliked category.

Waterfront housing was represented by six scenes which ranged from 3.89 to 5.33 with a mean of 4.57 which was in the slightly disliked category.

The overall means (Table 6.18) suggested a preference for housing that was setback from the water over housing along the waterfront or dense housing. Surprisingly, canal developments rated among the lowest due possibly to their lack of integration with the existing environment.

(3) **House surrounds**

The treatment of the immediate surrounds of houses was examined, covering houses where the trees and vegetation had been entirely cleared, houses located within existing indigenous vegetation, and the use of exotic vegetation around houses (Table 6.19).

Overall the differences between the groups of scenes were small and not significant: $F = 3.99$, df 2, 8, $p = 0.079$.

**Table 6.19 House surrounds ratings**

<table>
<thead>
<tr>
<th>Surrounds</th>
<th>Scene</th>
<th>Rating</th>
<th>Group mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barren</td>
<td>50</td>
<td>4.14</td>
<td>4.07</td>
</tr>
<tr>
<td></td>
<td>58</td>
<td>4.00</td>
<td></td>
</tr>
<tr>
<td>Native trees &amp; vegetation</td>
<td>12</td>
<td>4.78</td>
<td></td>
</tr>
<tr>
<td></td>
<td>13</td>
<td>5.03</td>
<td></td>
</tr>
<tr>
<td></td>
<td>48</td>
<td>4.79</td>
<td>4.87</td>
</tr>
<tr>
<td>Exotic vegetation</td>
<td>31</td>
<td>4.96</td>
<td></td>
</tr>
<tr>
<td></td>
<td>59</td>
<td>4.47</td>
<td></td>
</tr>
<tr>
<td></td>
<td>61</td>
<td>4.99</td>
<td></td>
</tr>
<tr>
<td></td>
<td>37</td>
<td>4.11</td>
<td>4.63</td>
</tr>
</tbody>
</table>

Two scenes depicted largely barren surrounds and both rated low with a mean of 4.07 which bordered on the slightly disliked category.
The treatment of the waterfront adjacent to holiday housing was examined (Table 6.21). This covered the placement of jetties, maintenance of the bank in a natural condition, and the construction of retaining walls and wharves. It also included scenes where sand had been imported and laid on the waterfront, and an eroding river bank.

Several of these treatments were rated over 5 while the remainder were below 5. The differences between the groups of scenes were significant: $F = 10.19$, df 4, 25, $p = 0.000$.

Jetties were represented by eight scenes and their ratings ranged over 1.5 with a mean of 4.74.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Scene</th>
<th>Rating</th>
<th>Group mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jetties</td>
<td>26</td>
<td>3.89</td>
<td></td>
</tr>
<tr>
<td></td>
<td>42</td>
<td>4.83</td>
<td></td>
</tr>
<tr>
<td></td>
<td>49</td>
<td>5.01</td>
<td></td>
</tr>
<tr>
<td></td>
<td>55</td>
<td>5.39</td>
<td></td>
</tr>
<tr>
<td></td>
<td>56</td>
<td>4.73</td>
<td></td>
</tr>
<tr>
<td></td>
<td>64</td>
<td>4.44</td>
<td></td>
</tr>
<tr>
<td></td>
<td>66</td>
<td>5.15</td>
<td></td>
</tr>
<tr>
<td></td>
<td>71</td>
<td>4.47</td>
<td>4.74</td>
</tr>
<tr>
<td>Natural bank</td>
<td>12</td>
<td>4.78</td>
<td></td>
</tr>
<tr>
<td></td>
<td>13</td>
<td>5.03</td>
<td></td>
</tr>
<tr>
<td></td>
<td>15</td>
<td>4.47</td>
<td></td>
</tr>
<tr>
<td></td>
<td>33</td>
<td>4.77</td>
<td></td>
</tr>
<tr>
<td></td>
<td>47</td>
<td>5.42</td>
<td></td>
</tr>
<tr>
<td></td>
<td>76</td>
<td>5.88</td>
<td>5.06</td>
</tr>
<tr>
<td>Retaining</td>
<td>10</td>
<td>3.62</td>
<td></td>
</tr>
<tr>
<td>walls &amp; wharves</td>
<td>16</td>
<td>4.37</td>
<td></td>
</tr>
<tr>
<td></td>
<td>17</td>
<td>3.87</td>
<td></td>
</tr>
<tr>
<td></td>
<td>23</td>
<td>3.72</td>
<td></td>
</tr>
<tr>
<td></td>
<td>24</td>
<td>4.57</td>
<td></td>
</tr>
<tr>
<td></td>
<td>40</td>
<td>4.2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>41</td>
<td>4.17</td>
<td></td>
</tr>
<tr>
<td></td>
<td>57</td>
<td>4.25</td>
<td></td>
</tr>
<tr>
<td></td>
<td>77</td>
<td>4.08</td>
<td>4.09</td>
</tr>
<tr>
<td>Sand beach</td>
<td>27</td>
<td>4.78</td>
<td></td>
</tr>
<tr>
<td></td>
<td>29</td>
<td>5.18</td>
<td>4.98</td>
</tr>
<tr>
<td>Eroded river</td>
<td>30</td>
<td>2.78</td>
<td>2.78</td>
</tr>
</tbody>
</table>

Natural banks were represented by six scenes with ratings ranging over 1.4 and a mean of 5.06. Scene 76, the highest rated scene, included water reflections which, as determined by previous analysis, would
have increased ratings by up to one unit. Adjusting for this yielded a mean of 4.90.

They were represented by nine scenes with a mean of 4.09.

Retaining walls and wharves included a wide range of structures and placements, many of which greatly altered the natural bank and amenity of the River setting.

Sand has been placed on sections of the waterfront to create beaches for skiing and swimming. This involved changes to the natural bank. Two scenes of such beaches were included with a mean of 4.98.
In some localities, erosion had scoured the natural bank. Only one scene was included and this had the lowest rating in the survey of 2.78 which represented greatly disliked.

Table 6.22 Summary of waterfront ratings

<table>
<thead>
<tr>
<th>Form</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jetties</td>
<td>4.74</td>
</tr>
<tr>
<td>Natural bank</td>
<td>5.06</td>
</tr>
<tr>
<td>Retaining walls &amp; wharves</td>
<td>4.09</td>
</tr>
<tr>
<td>Sand beach</td>
<td>4.98</td>
</tr>
<tr>
<td>Eroded river bank</td>
<td>2.78*</td>
</tr>
</tbody>
</table>

* single scene

Overall the highest rated waterfront scenes were scenes with a natural bank (Table 6.22). However even these rated only just over 5 due to the presence of housing and other structures in the scenes. Sand beaches and jetties rated just under 5 while the often gross change wrought by retaining walls and wharves reduced their rating to the low 4. The eroded riverbank rated the lowest.

These results suggested that people preferred the waterfront to be left in a natural condition, jetties were tolerated but retaining walls and wharves less so.
The mean of the formal developed parks was slightly less than the informal areas. The rating of the informal areas was in the fairly liked category. The findings complemented the importance of naturalness for scenic quality. The difference between the groups of scenes was significant: $F = 5.74$, df 1, 9, $p = 0.04$.

(6) Houseboats

There were many houseboats the River. It has been estimated that there were 1200 houseboats at the end of 2005 (Colliers, 2005). Generally they were moored along the bank when not hired but some were housed in marinas off the River. Several dozen houseboats provided permanent accommodation, particularly near Renmark.

The survey examined houseboats moored along the bank in a linear fashion vs moored in a marina. It also examined permanent sites (Table 6.24).

Table 6.24 Houseboat ratings

<table>
<thead>
<tr>
<th>Form</th>
<th>Scene</th>
<th>Rating</th>
<th>Group mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linear</td>
<td>1</td>
<td>6.25</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>4.73</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>4.72</td>
<td></td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>4.25</td>
<td>4.99</td>
</tr>
<tr>
<td>Marina</td>
<td>32</td>
<td>4.2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>34</td>
<td>4.54</td>
<td></td>
</tr>
<tr>
<td></td>
<td>36</td>
<td>4.36</td>
<td></td>
</tr>
<tr>
<td></td>
<td>38</td>
<td>4.71</td>
<td></td>
</tr>
<tr>
<td></td>
<td>43</td>
<td>4.16</td>
<td></td>
</tr>
<tr>
<td></td>
<td>54</td>
<td>5.44</td>
<td></td>
</tr>
<tr>
<td></td>
<td>72</td>
<td>5.36</td>
<td>4.68</td>
</tr>
<tr>
<td>Permanent</td>
<td>78</td>
<td>3.51</td>
<td></td>
</tr>
<tr>
<td>houseboats</td>
<td>51</td>
<td>3.42</td>
<td></td>
</tr>
<tr>
<td></td>
<td>52</td>
<td>4.02</td>
<td>3.65</td>
</tr>
</tbody>
</table>

Note: the mean for linear houseboats numbering 7 to 11 was 4.57. This provides a better comparison with marinas.

Among the scenes of houseboats moored along the River, scene 1 included only two houseboats and rated 6.25 while the remaining three scenes containing up to ten houseboats rated lower. There appeared to be a relationship between the number of houseboats moored and the rating (Figure 6.10). It was found that ratings decreased nearly a quarter of a unit (0.22) for each additional houseboat – e.g. 15 houseboats might result in a rating of 3.3$^{20}$. Obviously the trend could not be extended indefinitely and the effect probably diminished with each successive houseboat. It did however serve to indicate that the presence of large numbers of houseboats moored along

\[20. \text{ Remember that this did not use the 1 – 10 scenic quality rating but rather the 1 – 9 bipolar rating scale of developments.}\]
the River was viewed negatively and was more negative the greater the number of houseboats. It is also worth noting that one or two houseboats were regarded positively.

![Graph showing effect of houseboat number on ratings](image)

Note: Trend line $y = -0.22x + 6.6$

**Figure 6.10 Effect of houseboat number on ratings**

Four scenes were not many on which to build a solid case and the results should be regarded as indicative rather than definitive. Care should be taken with this finding.

Houseboats in marinas were represented by seven scenes which rated from 4.16 to 5.44. The mean rating of marinas (4.68) was lower than for the houseboats moored along the River (4.99). However the mean rating of large numbers of moored houseboats is 4.57. This provides a better comparison with the similar number of houseboats in a marina. On this basis, the marina rates slightly better than moored houseboats. The difference between these two groups, moored houseboats and marinas, was not significant: $F = 0.122$, df 1, 8, $p = 0.736$.

![Kia Marina #36 4.54](image)

![River Glen Marina #38 4.71](image)

![Long Island Marina #43 4.16](image)

![Permanent houseboats #51 3.42](image)

![Permanent houseboats #52 4.02](image)

The three scenes of permanently occupied houseboats rated from 3.4 to 4.0; a narrow range of 0.6. The mean of 3.65 represented the fairly disliked category. The trappings of urban dwellings such as fences, gardens, lawns, etc, were perceived as inappropriate in the River setting.
Irrigation pumps are a necessary infrastructure along the River to extract water for irrigation, domestic and industrial purposes. There are a very large number and a wide variety of pumps, some quite small and others very large public structures such as the Murray Bridge and Morgan pumping stations.

The four scenes of pumps in the survey sought to cover the range of sizes and also the level of ingenuity applied in their installation. The ratings ranged from 2.81 to 3.28, a narrow range of 0.47, with a mean of 3.08 which was in the fairly disliked category (Table 6.25).

Table 6.25 Pump ratings

<table>
<thead>
<tr>
<th>Use</th>
<th>Scene</th>
<th>Rating</th>
<th>Group mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pumps</td>
<td>2</td>
<td>3.06</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>3.28</td>
<td></td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>2.81</td>
<td></td>
</tr>
<tr>
<td></td>
<td>14</td>
<td>3.16</td>
<td>3.08</td>
</tr>
</tbody>
</table>

No relationship was apparent between the ratings and size of the pumps, the length of their piping, or the pump placement near the River. However the degree of impact on the Riverine environment may have had some influence. The highest rated scene (#6) had the least apparent impact while the lowest rated scene had extensive piping and rails built into the cliff (#9).

(8) Summary of development ratings

Seven forms of development were examined comprising a total of 22 options (Table 6.26).

Table 6.26 Summary of development means

<table>
<thead>
<tr>
<th>Form</th>
<th>Category</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>House location</td>
<td>Cliff top</td>
<td>4.5</td>
</tr>
<tr>
<td></td>
<td>Above floodplain</td>
<td>4.7</td>
</tr>
<tr>
<td></td>
<td>On floodplain</td>
<td>4.9</td>
</tr>
<tr>
<td>House form</td>
<td>Canal</td>
<td>4.2</td>
</tr>
<tr>
<td></td>
<td>Dense housing</td>
<td>4.1</td>
</tr>
<tr>
<td></td>
<td>Subdivision</td>
<td>4.6</td>
</tr>
<tr>
<td></td>
<td>Setback from water</td>
<td>5.3</td>
</tr>
<tr>
<td></td>
<td>Waterfront housing</td>
<td>4.6</td>
</tr>
<tr>
<td>House surrounds</td>
<td>Barren of trees</td>
<td>4.1</td>
</tr>
<tr>
<td></td>
<td>Native trees</td>
<td>4.9</td>
</tr>
</tbody>
</table>
## 6.8 RATINGS BY RIVER MURRAY

### COMMUNITY

As in the scenic quality survey, a small proportion, 5.8% (73), of the respondents in the survey lived in the River Murray, Lakes or Coorong region of the study. An issue is whether their ratings of development differed significantly from those of non-resident respondents.

The mean ratings for the scenes by respondents with postcodes from the region were compared with those from the remainder of the data set.

The overall mean of the development scenes by River Murray residents was 4.69 and for non River Murray residents was 4.77, a small difference of 0.08 which was nonetheless significant (paired sample t test: t = 3.55, df 79, p = 0.001).

In the nine-point dislike – like rating scale with a mean of 5, ratings above 5 were regarded positively while those below 5 were regarded negatively. About two-thirds of the ratings of both groups of respondents were negative.

Figure 6.11 indicates the differences in ratings between the River Murray residents and non-residents. Over 86% of the differences were within +/- 0.3 (Table 6.27).

| Exotic trees | 4.6 |
| Waterfronts | Jetties | 4.7 |
| Natural banks | 5.1 |
| Retaining walls etc | 4.1 |
| Sand beach | 5.0 |
| Eroded river bank | 2.8 |
| Caravan & recreation | Formal, developed | 6.4 |
| Informal, undeveloped | 7.2 |
| Houseboats | Linear moored | 4.6* |
| Marina moored | 4.7 |
| Permanent | 3.7 |
| Pumps | 3.1 |

* Mean of 7 to 11 moored houseboats

For each form of development the ratings indicated preferences and in many cases these preferences coincided with good environmental and planning practice, but in some cases they did not.

House location was favoured on the floodplain whereas it would be good practice for houses to be located off the floodplain. However the cliff top location which is not environmentally sound was least favoured.

Houses set back from the waterfront were favoured over those along the waterfront. Again this accords with good environmental and planning practice in that it reduces impacts and, depending on land tenure, can allow for public access.

The low rating of canal developments may be because they are fairly dense forms of development, which were not favoured. They also involved major change to the natural environment and the housing was not integrated with the environment compared with some shack developments.

Any trees around houses were preferred over barren surrounds, with native trees preferred over introduced species. The use of indigenous species accords with good environmental practice.

Natural banks, which represent low impact, were preferred over retaining walls, wharves and jetties.

The high score for sand beaches was probably due to them not being regarded as unnatural in the riverine environment. Certainly there are natural beaches on some river bends, for example Hogwash Flat below Waikerie. In the lower River location however there are none and this was where the scenes were located.

The preference for undeveloped sites for caravans and recreation derived from the overall preference for naturalness as opposed to development in the riverine environment.

It was evident that the ratings of moored houseboats along the River decreased inversely with the number of houseboats so there was some recognition of their impact. Large numbers of houseboats moored in marinas were slightly preferred over those moored along the River bank.

Finally irrigation pumps were regarded as a necessary evil, a form of infrastructure which was perceived to have significant visual impacts on the environment, particularly where the pipes were cut through and up the cliffs.
Table 6.27 Difference in ratings - R. Murray and non-R. Murray respondents

<table>
<thead>
<tr>
<th>Difference</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 0.1</td>
<td>24</td>
<td>30.0</td>
</tr>
<tr>
<td>0.1 - 0.2</td>
<td>31</td>
<td>38.8</td>
</tr>
<tr>
<td>0.2 - 0.3</td>
<td>14</td>
<td>17.5</td>
</tr>
<tr>
<td>0.3 - 0.4</td>
<td>6</td>
<td>7.5</td>
</tr>
<tr>
<td>0.4 - 0.5</td>
<td>3</td>
<td>3.8</td>
</tr>
<tr>
<td>&gt;0.5</td>
<td>2</td>
<td>2.5</td>
</tr>
<tr>
<td></td>
<td>80</td>
<td>100.0</td>
</tr>
</tbody>
</table>

The five scenes for which the differences in rating by the two groups of respondents were 0.4 or more are summarised below.

The largest difference of 0.60 was for scene 31 showing exotic vegetation amidst holiday housing. The River Murray residents rated this much lower than non-residents. This complements the finding in the scenic quality survey (section 4.10) that local residents rated the native vegetation higher.

The other four scenes all covered the treatment of the waterfront and house setback. The local residents rated all of these scenes more severely than did non-residents.
shacks, which the local residents rated more negatively than the non-residents.

6.9 SHACK OWNERS’ RATINGS

An assessment on the ratings of shacks by shack owners was carried out to determine whether their ownership affected their ratings. It could be hypothesised that the ratings of shack owners would be biased towards a greater liking for shacks.

There were 67 shack owners in the survey, none of whom resided in the region. The mean ratings for the scenes by shack owners were compared with those from the remainder of the data set. This covered all 80 scenes in the development survey.

The overall mean of all the scenes by shack owners was 5.48 and for non shack owners was 4.72, a quite large difference of 0.76 which was significant (paired sample t test: t = 16.64, df 79, p = 0.000).

Whereas 75% of the scenes were rated negatively by the non-shack owners, only about 31% were rated negatively by shack owners.

Figure 6.12 indicates the differences in ratings between the shack owners and non shack owners. It is immediately apparent that almost all the differences are positive, in other words, the ratings by shack owners were almost uniformly higher than non shack owners. Some 35% of the differences were over 1.0 (Table 6.28).

<table>
<thead>
<tr>
<th>Difference</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 0.25</td>
<td>13</td>
<td>16.3</td>
</tr>
<tr>
<td>0.25 - 0.5</td>
<td>9</td>
<td>11.3</td>
</tr>
<tr>
<td>0.5 - 0.75</td>
<td>13</td>
<td>16.3</td>
</tr>
<tr>
<td>0.75 - 1.00</td>
<td>17</td>
<td>21.3</td>
</tr>
<tr>
<td>1 - 1.25</td>
<td>22</td>
<td>27.5</td>
</tr>
<tr>
<td>1.25 - 1.5</td>
<td>5</td>
<td>6.3</td>
</tr>
<tr>
<td>1.5 - 1.75</td>
<td>1</td>
<td>1.3</td>
</tr>
<tr>
<td>80</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

In summary, the average rating by shack owners for all 80 scenes was 0.76 higher than by non-shack owners. While non-shack owners rated 75% of all scenes negatively shack owners rated only 31% negatively.

A further analysis was undertaken covering only the scenes of holiday shacks and associated waterfront treatments. This did not include canal developments. A total of 45 scenes was included.

The mean for non-shack owners of the shack scenes was 4.59 and for shack owners 5.56, a large difference of 0.97 which was statistically significant (paired sample t test: t = -22.139, df 44, p = 0.000).

Of the shack scenes, non-shack owners regarded 37 scenes negatively and 8 positively. However for shack owners the numbers were virtually reversed: shack owners rated 34 scenes positively and only 11 negatively.

Figure 6.13 indicates the differences in ratings of shack scenes between the shack owners and non-shack owners. In this case, all the differences were positive, in other words, the ratings by shack owners were higher than those of non-shack owners for all scenes of shacks.

Table 6.29 indicates that the majority of differences were quite large; nearly 60% were over 1.0.
Figure 6.13 Difference in ratings of shack scenes: shack owners and non-shack owners

Table 6.29 Difference in ratings of shack scenes: shack owners and non-shack owners

<table>
<thead>
<tr>
<th>Difference</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 0.25</td>
<td>1</td>
<td>2.2</td>
</tr>
<tr>
<td>0.25 - 0.5</td>
<td>3</td>
<td>6.7</td>
</tr>
<tr>
<td>0.5 - 0.75</td>
<td>7</td>
<td>15.6</td>
</tr>
<tr>
<td>0.75 - 1.00</td>
<td>8</td>
<td>17.8</td>
</tr>
<tr>
<td>1 - 1.25</td>
<td>20</td>
<td>44.4</td>
</tr>
<tr>
<td>1.25 - 1.5</td>
<td>6</td>
<td>13.3</td>
</tr>
<tr>
<td></td>
<td>45</td>
<td>100.0</td>
</tr>
</tbody>
</table>

One scene, #80, was rated 7.11, almost perfect according to shack owners. The shacks were set well back from the water and the surrounds were well grassed. Several other scenes, #45 and #62, were similarly highly rated.

Scene 45  Shack owners 6.66
Non-shack owners 5.38 Diff. 1.28

Scene 62  Shack owners 6.58
Non-shack owners 5.26 Diff. 1.32

A summary of the remaining scenes with differences over 1.25 is provided below. These indicate that the shack owners were very positive while non-shack owners were negative.

Scene 73  Shack owners 6.3
Non-shack owners 4.84 Diff. 1.46

Scene 74  Shack owners 6.62
Non-shack owners 5.18 Diff. 1.44
In summary, in for scenes of shacks and associated waterfront, shack owners were far more positive than non-shack owners. The difference in overall means was nearly 1.0. Shack owners rated only 24% of scenes negatively compared with 82% by non shack owners.

6.10 DETAILED COMMENTS ON SCENES

The survey provided the opportunity for participants to comment on each scene prior to rating it and many did so.

A few pasted an identical comment on most scenes:

- human presence on the river
- mobile pollution the death of the river
- too much development too close to the river and denial of public access and added pollution

Apart from these, there were many comments relevant to the features present in the scene.

The full comments on each scene and category are provided on the attached CD together with an image of the scene.

It was apparent in collating the comments that there were far more negative comments than positive. Overall there were 1521 comments, 906 were negative and 487 were positive. A further 12 were neutral, 50 posed questions, and 65 were general statements about the scene. There were an average of 11 negative comments and 6 positive comments per scene. Almost twice as many comments were negative as positive.

The comments were not evenly spread across all scenes (Figure 6.14). The number ranged from 8 to 31. Figure 6.14 also indicates that there were more negative comments on scenes which rated low.

![Figure 6.14 Number of comments per scene](image)

Low rating scenes attracted more negative comments than the more highly rated scenes. While this may seem self evident, it was apparent that participants did not offer many positive comments on the highly rated scenes.

Figure 6.15 indicates the proportion of comments that were positive or negative for each scene; the high proportion of negative comments was apparent.

The relationship of negative comments and ratings is further examined by Figure 6.16 which indicates the percentage of comments that were negative. In some of the lower rated scenes (< rating 4), over 75% of comments were negative. However in the higher rated scenes (> rating 6), negative comments accounted for less than 20%.
Figure 6.15 Proportions of positive and negative comments per scene

Figure 6.16 Relationship between negative comments and ratings

The following summarises the comments for each form of development in the Development Survey.

House location

Houses were depicted on cliff tops, above the floodplain, and on the floodplain.

Cliff top

Cliff top scenes attracted mainly negative comments:

Get these profiles away from the cliff top
Too close to the edge (common comment)
‘Pimple’ great view from house no doubt, but awful from river, too hard, no blending of landscape to dwelling
Why was that development allowed there?
Obtrusive - just because one can does not mean that one should.
Ostentatious: ‘Look, I’m wealthy enough to own property on a cliff top right above the river, and am the only one to do so!’

Positive comments included:

The home would have a good view
Appears to be more in keeping with the natural lay of the land and remaining vegetation as a development (scene #22)

Above the floodplain

Scenes above the floodplain surprisingly attracted mainly negative comments, particularly about their colours, their size and that their suburban character was inappropriate for the River setting:

The blue shack sticks out like a sore thumb, maybe there should be development regulations forcing shack owners to stick to natural colours (#28)
Houses too close together
Suburban cancer encroaching on the natural areas of the river – abhorrent
Housing estates? please!!!
Suburbia with river attached
Some houses too large and pretentious

Some found the set back of the houses from the River a positive factor:

Set well back therefore lesser visual impact
At least this development has left the water’s edge reasonably well vegetated. In time the new trees will grow.

Floodplain

Three of the four scenes of houses on the floodplain were from the cliff top overlooking the river and these scenes generally rated higher than other scenes from ground level as they included the whole River and trees on the floodplain.

Negative comments included:
Overall, too many man made and/or permanent structures and not enough natural. Also, too many individual spaces and not enough community/open ones.
Shacks this close to the river should not be allowed together with the jetties. Public access should be compulsory.
How would these fare in a flood situation!!?
Jammed in cheek by jowl: public spaces dominated by private dwellings.
Too intensive. Prefer buildings further back from the river.
Buildings are too close to the river and detract from the natural beauty of the trees.
Retaining walls to the water are unsightly and ad hoc.

Positive comments included:

Beautiful trees, grass to the water, houses set back. Attractive scene.
Traditional lower impact shacks.
Trees mellow the effects of the buildings which should be in more natural colours.

House form

House form covered canal developments, dense housing developments, housing set back from the River, subdivisions, and waterfront housing.

Canal developments

Surprisingly the comments about canal developments were generally negative – “shades of Queensland” was a common view.

Negative comments included:

Looks like Florida or the Gold Coast
Toyland
Aquaville
...parking bay with permanent residences because they can
Manmade waterway - just looks wrong. Trees are foreign, houses look like they belong in Queensland.
Looks like ... ticky tacky boxes all built so close that they pay a fortune for. Where is the eco building requirements and water tanks??
Awful, central Adelaide apartment boxes dumped on a manufactured waterway
Manmade development - fabricated impact
Appalling appalling
Yuck yuck yuck. Very blocky, very 'commercial', does not blend with the environment.
The big houses seem not to fit in to the river’s simplicity

Positive comments included:

At least it looks planned and managed - perhaps over manicured at the moment
It looks like this area has been landscaped and it looks quite pretty.
Do away with the lawn areas and plant with indigenous plantings - otherwise it looks OK
Commercial and planned

Dense development

Dense developments attracted mainly negative comments:

Love thy neighbours
Shacks too close (many such comments)
Why such high density and minimum setback between buildings? Too close.
Suburbia again - jammed in so close, why do they come here at all?
Cheek to jowl. Over developed. Too suburban.
Remove all fencing between properties for all users of the river to gain access

Housing Setback from River

Three of four scenes in this group received positive comments but the fourth (#27) of large houses set back from the River received strongly negative comments.

Positive comments included:

Clearly for tent city in peak times, needs native landscape as priority to buffer out houses, big trees are nice.
The trees at the rivers edge soften the lawn space, and shacks are built away from the bank.
The greenery and trees don’t make the shacks/houses as bad or negative on the landscape.
Better space before the river - public space?
OK, set back from river and reasonably non obtrusive
Shacks set well back for public use
.. much better integration of houses and riverfront - the houses are set back and lawn flows well

Negative comments included:

Toorak on the Murray
Houses too close together
No sympathy for the location
Public access to the river not private ownership
Why don’t they go live in suburbia?
Subdivision

Subdivisions were represented by a single scene (#65) which though set well back from the river in an orderly way, included large American barn-like houses which many participants objected to.

Negative comments included:

Awful, stripmine the landscape then build this crap. kit homes gone wrong. It’s terrible, ugly and insulting, quickly grows some trees and hide this from international tourists.
Totally inappropriate housing style - this isn’t New England USA

Positive comments included:

This interesting design blends well and is appealing
I like the fact these structures are back from the river and hopefully having less impact on the river
House shapes are ugly, but at least they are well back from the shore.

Waterfront housing

The six scenes showing housing along the waterfront provoked generally negative reactions.

Negative comments included:

What happens in a flood!!?
Is this on the main channel ? Get back !
Control of construction standards required including the prohibiting of multi-story dwellings on the river bank
A blend of styles within an area much altered by 150 years of colonisation and trade.
Too busy, house needs to be set back further from the water edge
Such effort has gone into destroying the scene
Public riverfront totally privatised, and with maximum visual intrusiveness.
Mine, mine, mine
Pluses: neat and green with original red gums, and limestone construction gives a 'local' look. But still, it has a 'keep out' look about it, which is not appropriate for a public commodity (i.e. the river itself)

Positive comments included:

More modest interaction with the natural landform
Good to see usage of the Murray.
Neat and clean

Good integration using local stone for retaining (walls)
Well kept and manicured

House surrounds

The surroundings of houses referred to whether they were barren and largely devoid of trees, they included native trees and plants near the houses, or used exotic or non-indigenous trees.

Barren

Both scenes of houses without surrounding trees attracted mainly negative comments:

Where are the trees?
Very clinical in appearance and unappealing
What a complete abomination
Too stark - ambience low
Looks like they are prepared for bushfire season

Native trees & vegetation

Houses surrounded with native trees and vegetation attracted mainly positive comments:

Has balance. Sound banks, trees, screen, set back mostly
... well screened by local trees
I like the trees, they buffer out the shacks.
The shacks have less visual impact on the landscape.
Gum trees hide some of the untidy shacks

Negative comments included:

Impacts appearing and they wont stop until the natural bank and river edge are damaged beyond repair
Looks like a suburban backyard - while relatively tidy I would prefer not to have buildings on the banks and traffic control to prevent compaction around significant trees

Exotic vegetation

Reaction to the exotic vegetation near housing was mainly negative:

It had to happen.... a finial. God help us, the finial cancer has reached the river, second only to cane toads for environmental pollution.
Palm trees look out of character for the river and its environment.
Palm trees should be banned from being planted on the riverfront, they look ridiculous and so out of place. Plus they don't give much shade anyway. Unsympathetic to the environment - houses, imported trees, wire fences. No native landscape, but looks English instead - pity. These non native trees and cream brick houses look entirely out of place. The garden is attractive but looks out of place, it doesn't fit in with the river and native species usually found there.

Positive comments included:

Palm trees add an aesthetic appeal

Waterfront

The waterfront adjacent to housing varied widely and included natural banks, retaining walls and wharves, sand beaches, eroded banks, and jetties.

Natural bank

The presence of housing along the natural banks resulted in mainly negative comments:

More and more sheds and buildings
Where is the consideration for integration with natural landscape elements. Filtered views? Setback? Colours? Flood potential?
A bit of a hotch potch of buildings which would be better if they blended more with the landscape.
Ok except for the awful green house, what were they thinking? Much tighter controls are needed to eliminate this ever happening. Its a parody.
Even though the 'shacks' need sprucing up lets not choose only the wealthy to be able to access the river but make it available to all.
Suburban cancer encroaching on the natural areas of the river - abhorrent.
The type of development I hate, suburbia on the banks of the Murray.

Positive comments included:

This is good because the house does not have too much white on it, and it is well screened by local trees.

Has balance. Sound banks, trees, screen, set back mostly.
Nice natural looking setting, except for the bright, light green/blue shack. Need neutral tones like the other shacks.
Peaceful scene here, grassy etc.
Reasonable attempt at fiting into the locale.
Shack areas with at least some of the native surrounds intact is better than none.

Retaining walls and wharves

The comments about the retaining walls and wharves constructed along the waterfront adjacent to housing were overwhelmingly negative:

Hideous change to river banks
Very intrusive presence on the waterfront
Appallingly unsympathetic to the environment & wildlife
(Retaining) Walls in middle of picture are quite confronting - garden walls on right hand side much softer and nicer to look at.
The wharf is an eyesore and very ugly
Stones look very artificial...
Uninspiring dwelling, close to waterfront, hideous stone wall - and clearly marked as private access only!
Why is there need for all of the mooring facilities? Inappropriate to build a retaining wall of rocks - at odds with the riverine environment
The river edge should be left as natural as possible
The rocks look completely out of place.
Rock revetment is uncharacteristic of river bank
Again the retaining walls look terrible, the main looks all messy and man made, no soil, no reeds, no lawn.
YUK!
Ugly ugly brick wall
Whya are people allowed to build right up to the bank. There must be a 100 metre buffer zone between development and the river bank for all to use. I cannot build on the beach front and claim the beach, so why is the river different.
Excessive retaining walls
Who's river is it?

Positive comments included:

The large trees save this scene
Quite a tidy scene
Reasonably good blending in of development.
Low scale impact - sustainable.
Sand beach and eroded bank

Comments about the sand beach were minimal but comments about the eroded river bank were entirely negative.

Totally inappropriate to create private beach on crown land and retaining wall out of character with the riverine environment. Who said he could do that?
Excessive riverbank erosion - 'docking infrastructure required to manage area. Destruction and poorly managed. Need smarter approaches than this. Requires effort and commitment to achieve the right outcomes. Naturally reeded and grassed river banks - protected from erosion. The condition of the bank is poor and unsightly degradation of the bank - needs better management.
Disgusting damage to the fragile bank. Very ugly.

Jetties

The eight scenes with jetties in front of housing displayed a variety of structures. There were twice as many negative comments as positive.

Negative comments included:

Too many jetties and loss of bank reeds & grass. Would 1 or 2 'T' jetties accommodate the craft, leaving space for revegetated bank?
Too many private jetties (many similar comments)
WHY SO MANY JETTIES - Not required or acceptable
Uniformity of facilities construction and sharing facilities to reduce the number of constructions on the bank would look better.
Ditch the tyres again. No uniformity in the structures or material used. Need set sizes and guidelines on construction. Would rate higher if the tyres could be replaced.
A blight on the bank.
Jetties distract from scenic appearance.
Crap looking jetties, need a standard.
The riverfront is on all differing levels and appears slap hazard with no planning forethought or consideration.
Mine, mine, mine

Positive comments included:

Keeping it real without big structures
Neat, clean & safe mooring
The first jetty looks pretty old, but the rest of the photo looks fine.
The jettys look fine, but the rock walls make the bank look ugly.
Quite informal and good, but fiercely protected by shack owners I bet.
Very nostalgic. Has a certain old worldly look, but nice.
All landing should be floating board walks for all river users.
These homemade jetties are unobtrusive.
I like the way these structures blend.

Houseboats

These were shown in linear moorings along the bank and also in marinas. Permanently occupied houseboats were also included.

A few houseboats along the bank were viewed positively:

This looks awesome! Natural riverbank and just 2 houseboats, looks like it would be a nice place to spend a weekend, or live!

However many houseboats moored linearly were viewed negatively:

Carpark anyone?
Too many houseboats.
...feels very crowded, there's no serenity.
Get the houseboats off the river bank.
Remove to ... marina.

Scenes in which the houseboats were clearly in a marina received generally positive comments:

Good to see development set back from the water.
Clustered development off stream.
Like a supermarket parking lot.
Keeping the houseboats in a marina keeps the river clear.
Designated area for houseboat moorings is appropriate as long as connected to approved waste water systems and not used as permanent residences.
Looks like a car park on the river- don't like it.

Permanently occupied houseboats received mainly negative comments:

Permanent occupation of houseboats should not be permitted on the river.
Old fashioned shack. Nice for them, but not nice to look at.
Disaster
This whole collection of houseboats has been turned into a very untidy and altered landscape. How dare they trash what was once such a lovely area...Make the Council enforce the licence conditions. How can they get away with it? You've got to be joking? White picket fence - get rid of it!
All these houseboat scenes are okay while the boats are new and tidy but I suspect they could become a slum area and where does all the rubbish and waste go?

Pumps
While some respondents recognised pumps as essential infrastructure, many were outraged by their environmental and visual impact:

Absolute eyesore!
Ugly
Attractive scene disfigured by construction
A real eye sore, ugly
Disgraceful - Appalling there must be better ways
These days a totally unwarranted intrusion
Old design would be done differently today

Some were interested in the cultural history represented by the pumps:

A bit of industrial history adds to our cultural history and understanding of an area...significant cultural landscape element

Caravan and recreation areas
The scenes illustrated formal developed areas and informal undeveloped areas.

Formal areas
Nearly all the formal scenes received positive comments:

Set back behind vegetation minimises impact on landscape and view from river.
A well maintained park is good
Trees close to the river bank soften the intrusion
Pleasant view, human presence masked by the trees. Willows should be removed and planted with Indigenous flora.
A very clean and tidy area and appealing to travellers

Tranquil. Grass to water's edge, cabins inconspicuous.
The green grass looks nice and fresh, the trees are native and provide shade which is excellent, and the jetty indicates the land is available for public use.

Negative comments included:

Trees have obviously been planted as they are too uniform. Should be staggered to retain a more natural look.
Remove the willow trees, have a few more rushes and gum trees at water's edge, and this would look alright.

Informal areas
Comments regarding the informal grounds were almost uniformly positive:

Natural, nice for some non shack owners to enjoy the river
Natural and unspoilt
Beautiful, just beautiful
Very pleasant community itinerant area.
Reasonable bank care and protection.
This is attractive. It captures the true nature of the Murray
Appears to be a lovely spot for casual holiday

Conclusions
Gaining participant’s comments as they rated the scene was worthwhile as it recorded their immediate reaction to the scene. With the large sample size and number of comments, these could be taken as broadly reflective of the general community’s response.

The strength of many of the opinions given on the scenes was striking – participants obviously felt strongly about what they regarded as desecration of the riverine environment. The language used and their condemnation of the impacts were evidence of the strength of their conviction.

It was significant that the majority of comments, two thirds – were negative. There was a clear relationship between negative comments and the rating of the scene, with high rated scenes attracting little criticism while low rated scenes attracted mainly negative comments.

Although not explicitly made, it was apparent that for many participants the survey represented their first view of shack developments on the River and also of pumps, and possibly houseboats. Many were
obviously not aware of the extent of these various developments along the River.

Many claimed the River as their own, by which they meant a publicly-owned resource, and they were obviously appalled at the extent that the river bank had been occupied by shack developments. This also applied to houseboats appropriating stretches of the River bank as their own.

There may be merit in placing on an appropriate website, extensive photographs of developments to be found along the River it so that the community might be better informed.

The contrast in opinion about the same scene was often amusing, for example, comments about palm trees:

Palm trees look out of character for the river and its environment.
Palm trees should be banned from being planted on the riverfront, they look ridiculous and so out of place. Plus they don’t give much shade anyway.

Versus:
Very lovely, colours blend with nature and will accept the fern trees (sic) not sure if they are native
Palm trees add an aesthetic appeal

Although positive comments about most scenes were provided, they were far outnumbered by the negative comments. Also while many of the negative comments were specific about their concerns, the positive comments were often more general:

Reasonably good blending in of development
Neat and clean
Has balance
Reasonable attempt at fitting into the locale

6.11 IMPLICATIONS OF SURVEY FINDINGS

Taking into account both the comments on the individual scenes and also the comments on the survey overall (Section 6.6), the following findings are provided.

1. Ensure public access to the waterfront. The public’s right of access to shack areas, particularly those remaining on Crown land, requires clarification and/or publicity.

2. Set houses back from the River.

3. Ensure public access to the waterfront. The public’s right of access to shack areas, particularly those remaining on Crown land, requires clarification and/or publicity.

4. Recognise the certainty of flooding of the floodplain and its consequent impact on extant developments.

5. Consider flood risk in the location, design and construction of housing.

6. Locate houses above the area of flood risk and minimise developments on the flood plain.

7. Avoid locating housing or other developments on cliff tops overlooking the River. Ensure they are well set back and screened.

8. Improve blending of housing with the environment, particularly in respect of colour and size and avoidance of inappropriate imported designs (e.g. American barns). Colours should blend with the environment and primary colours should be avoided.

9. Avoid use of introduced (exotic) trees and vegetation and the establishment of suburban type gardens.

10. Retain native trees and vegetation near housing, in particular protect the remnant red gums.

11. Avoid barren treeless surrounds to buildings as this provides no screening to the houses.

12. Avoid construction of retaining walls and structural changes to the river bank and riparian zone.

13. Investigate removal of many of the existing retaining walls.

14. Ban the use of large rocks for retaining walls.

15. Ban the import of sand to create beaches along the banks, and the associated flattening of the banks.

16. Provide common jetties for groups of housing and the public rather than one structure per shack.
17. Provide design standards for the construction and materials of jetties. Jetties should be subject to approval and be inspected following construction. They should also be regularly inspected for safety and integrity. Ban the use of old tyres on jetties.

18. Retain rushes and reeds along the River bank to provide protection from boat wash and to maintain the indigenous fauna and flora.

19. Moor houseboats in off-river marinas and carefully managed these to avoid impacting the River visually or by their wastes.

20. Select suitable sites for marinas in an integrated manner in consultation with the industry so as to minimise the use of areas of high environmental value.

21. Ban the mooring of permanently occupied houseboats on the River channel. They could be permitted in off-river locations such as marinas where waste, grey water and other impacts are properly managed.

22. Pumps were recognised as necessary infrastructure but many of the current pumps left much to be desired by way of their visual impact. As they occurred along the length of the River, they were often in otherwise scenically attractive areas. Their structures together with the pipes laid through cuttings up the cliff had significant impacts. A tidying up and improvement program directed towards lessening their visual and environmental impacts should be initiated.

23. Provide both formally developed areas for camping, caravans and recreational use as well as undeveloped natural areas. Avoid environmentally significant areas. While the formal areas generally have facilities the informal areas do not.

24. Willows attracted many adverse comments and consideration should be given to their removal along the River.

25. Implied in the comments was concern about any further spread of housing developments along the River. Based on the survey’s findings, this should be strongly opposed.

These issues were considered further in preparation of Chapter 7, Application to Planning and Policy.

It was apparent from the comments, particularly on the overall survey, that there was a high level of concern among the community regarding the condition of the River. While it was apparent that many participants had been unaware of the extent of developments along the River, many who had a long association with the region expressed their deeply felt concern about its decline.
6.12 FORM OF THE RIVER MURRAY DEVELOPMENT SURVEY

Visual Effects Survey of River Murray Developments

Welcome to the Visual Effects Survey of River Murray Developments

Purpose of this survey

The River Murray is one of South Australia's most popular tourist regions and is of significant environmental value. The Department of Water, Land and Biodiversity Conservation together with the South Australian Murray Darling Basin Natural Resources Management Board have commissioned a study of the region's scenic quality.

The study includes this survey of community attitudes about the visual effects of developments along the River. These developments include housing, marinas, houseboats and caravan and recreation facilities.

A set of 80 photographs will be shown and you are asked to rate, in the context of their surroundings, whether you like or dislike the visual appearance of development shown.

The survey is only interested in the development's effect on visual amenity, not on any ecological or land management effects.

The houses and other developments shown are typical examples of the types of developments found on the River Murray and no criticism or endorsement of them is necessarily intended.

The results will assist Local and State governments in planning and management of development along the River Murray.

You are invited to participate in rating these photographs. No qualifications or experience are required to participate and the responses will be anonymous. Participants need to be a minimum of 18 years of age. It will take about 15 minutes.

The survey closes on Friday, 22 December 2006.

How it works

- You will be shown a photograph of a scene and asked to rate its appearance
- The ratings are on a scale of 1 to 9, with 1 = dislike very much, and 9 = like very much
- Click the appropriate number in the scale to register your rating
- You will have the option of entering comments on each scene (please enter your comments then rate the scene)
- Once a rating and any comments has been recorded you will be automatically shown the next scene.

How long will it take?

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• The survey has 80 scenes. How long it takes will depend on how much
time you spend rating each scene: it can be completed in less than 15
minutes
• There is no time limit to rate each scene, however, your rating session will
end after 30 minutes of inactivity
• Please rate all scenes as this will provide a greater statistical weight to the
survey
• None of the scenes for rating are repeated
• At the end of the survey, or if you leave before the end, you will be able to
provide comments.

Hints

• Trust your initial instinct - don't try and analyse your response
• Try to ensure you have no distractions (phone, callers etc) before you
start the survey
• If you feel tired or get interrupted during the survey, take a break; the
survey will wait until you return (for a maximum of 30 minutes).

Contact

The project coordinator, Scott Douglas, is available if you have any questions on
e-mail Douglas.Scott@saugov.sa.gov.au or by phone on (+61 8) 8463 6912.

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Demographic Information

Please fill in all fields on this form.

This (anonymous) information will be used to assess how representative the survey participants are compared with the South Australian community.

You can write comments about each scene - do this before rating them.

Age Group
Please indicate your age group

Gender

☐ Female
☐ Male

Birthplace

☐ Born in Australia
☐ Not born in Australia

Education
Please indicate your highest education level attained

Postcode
Please indicate your home postcode (if in Australia)

How familiar are you with these areas?

Upper River Murray (Morgan to Border)
Lower River Murray (Wellington to Morgan)
Lakes Alexandrina and Albert
Goolwa and Hindmarsh Island area
Coorong

Questions about your use of the Murray

☐ Are you a shack owner?
☐ Are you a water skier or boatie?
☐ Have you used a houseboat on the River?
☐ Do you go fishing on the River?
☐ Do you live on or near the River?

Internet connection speed

This information will be used to reduce your download requirements.

☐ Broadband (I have a fast Internet connection)
☐ Dial-up (I have a slow Internet connection)
You are about to start the survey

Example Landscapes

- The survey will start with a series of 4 example landscapes. This will give you an example of the types of landscapes you will be asked to rate during the survey.
- During the example landscapes phase you can continue to the next landscape by either clicking the photograph or the rating buttons at the top of the page (these ratings are not recorded), otherwise the page will automatically progress to the next example landscape after a few seconds.

Scene for Rating

Rating scale above scene:

Dislike very much
1 2 3 4 5 6 7 8 9

Like very much

Continue to the next example landscape by clicking the photograph or the rating buttons (above) otherwise this page will automatically progress to the next example landscape.
Comment on this scene
Example Scene 3

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Exit Survey

Rating scale above scene:

<table>
<thead>
<tr>
<th>Dislike very much</th>
<th></th>
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</table>
Comment on this scene
Scene 4 of 80

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Visual Effects Survey of River Murray Developments

Thank you for completing the survey

Please feel free to submit any comments you may have about the survey

Please note:

- The survey did not contain any repeated scenes.

Submit
No Comments

Back to front page.

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