Barcaldine Recreation Park
Barcaldine Recreation Park

- The idea of a recreational lake is an old one, being supported in council plans as far back as 2009.
- Early 2016 initial estimates were made for the construction of the lake.
- Barcaldine Regional Council applied for State Government grants and were successful in July 2016.
- A Public Consultation Meeting was held in September 2016 to which the community was invited.
Two active Project Stages

- Stage 1 – Man made lake
- Stage 2 – Amenities block, Concrete paths and Boat ramp
Stage 1 – Man made lake

- 1200 m by 250 m Lake, narrow central island
- ‘Endless River’
- Beach area by Amenities block
- Boat ramp by carparking
Stage 2 – Amenities block

- Public Toilets with showering
- Store room
- Kiosk / kitchenette for events & public hire
Location of Recreation Park
Recreation Park Benefits

- Fitness and Recreational Activities
- Opportunity to hold State/ National Skiing Competitions
- Retention of 15 – 24 year old lost demographic
Cultural Heritage
Geotechnical Investigation
Nominal Test Pit Depth: 3.0 m
The Parks Soil Profile generally consisted of:

- low to high plasticity clay
- sandy clay with fine to medium grained sand
- sand and clay mixtures.
Acoustic quality objectives

- Predicted noise levels, dB(A)
  - 2 m Embankment

<table>
<thead>
<tr>
<th>Receptor ID</th>
<th>Receptor address</th>
<th>Criteria</th>
<th>Predicted levels L_{Aeq,adj,1hr}, dB(A)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>S01</td>
</tr>
<tr>
<td>RES01</td>
<td>148 Acacia Street</td>
<td>45 Day 40 Evening</td>
<td>37</td>
</tr>
<tr>
<td>RES02</td>
<td>150 Yew Street</td>
<td>45 Day 40 Evening</td>
<td>39</td>
</tr>
<tr>
<td>RES03</td>
<td>66 Bloodwood Drive</td>
<td></td>
<td>37</td>
</tr>
<tr>
<td>RES04</td>
<td>76 Bloodwood Drive</td>
<td></td>
<td>35</td>
</tr>
<tr>
<td>EDU01</td>
<td>23 Willow Street</td>
<td>55</td>
<td>30</td>
</tr>
</tbody>
</table>

Sound model assumed 108 dB Ski Boats

- Noise levels are predicted to exceed the acoustic criteria by up to 2 dB

Recommendations included
- Ski boat operations limited to daytime hours
- Water craft limited to a sound output power level of 108 dB
GHD developed water balance model, based on evaporation and infiltration

Soil data from the April 2017 Geotechnical Investigation was used to estimate soil infiltration

A saturated soil hydraulic conductivity of $1 \times 10^{-6} \text{ m/s}$ was adopted

Average monthly rainfall and pan evaporation values at Barcaldine
- Annual average ‘top-up’ flow rates vary between 4 and 17 L/s

- An increase to the townships Great Artesian Basin’s allocation

- Existing town bores are capable of meeting increased rates with upgrade

- New Town bore may be more cost beneficial

- 50th percentile year results – monthly average
Preliminary Lake Design

- Lake bed cut too low
  Approximately 1.3m below natural surface

Typical Section - Water level in relation to batter
Final Lake Design

- Lake bed Cut increased by 0.6 m
- Fish habitat/nursery area included at the southern end
Site is sparsely vegetated, with no mapped Regional Ecosystem vegetation.

February 2018 Survey of the site confirmed a low risk to Flora and Fauna.
### Flood Impacts

![Map of proposed ski lake design by others.](image)

<table>
<thead>
<tr>
<th>AEP</th>
<th>Duration (min)</th>
<th>Average Q (m³/s)</th>
<th>Median Q (m³/s)</th>
<th>Critical Q (m³/s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1% AEP</td>
<td>1,440</td>
<td>1,149</td>
<td>1,131</td>
<td>1,140</td>
</tr>
<tr>
<td>2% AEP</td>
<td>1,440</td>
<td>929</td>
<td>898</td>
<td>903</td>
</tr>
<tr>
<td>5% AEP</td>
<td>1,440</td>
<td>669</td>
<td>632</td>
<td>639</td>
</tr>
<tr>
<td>10% AEP</td>
<td>1,440</td>
<td>478</td>
<td>461</td>
<td>466</td>
</tr>
</tbody>
</table>
1% AEP
Post Development
Thank You.