Lake Albert Scoping Study Outcomes

Project Background

The Lake Albert Scoping Study commenced in January 2013 and has investigated a range of potential management actions to reduce and maintain salinity in Lake Albert.

The Project has been directed by an intergovernmental Steering Committee with technical input from a state government Project Advisory Group. A Community Reference Group has met approximately monthly throughout the project and acted as a conduit between the community and government.

The project has included;

- Literature Review
- Community Requirements Study
- Preliminary Modelling Investigation
- Qualitative Engineering Study
- Legislative Review
- MSM BigMod Modelling
- TUFLOW FV Modelling
- On ground investigations (geotechnical, ecological, topographic and acid sulfate soil)
- Engineering Feasibility Investigation
- Cost Benefit Analysis
- Options Paper

The main study outcomes are listed for each potential management action below.

Permanent Regulating Structure in Narrung Narrows

- Community generally opposed to the concept and Ngarrindjeri specifically do not support engineering interventions
- Modelling showed it increased salinity in Lake Albert
- Would be expensive to build and operate

Removal or modification of Narrung Causeway*

- Community generally in support
- Modelling showed negligible benefit to Lake Albert
- Removing the Causeway would impact the ferry operation. Without the ferry, this is the longest alternate route in SA and constructing a bridge would be expensive.

Dredging Narrung Narrows*

- Community generally in support
- The logic was to model the greatest dredge volume first and if benefits were found, the dredged volume would be reduced until there was an optimum benefit/effort ratio
- 5-6 million cubic metres were 'dredged' in the model to make the Narrows a minimum of 200m wide and 2m deep. If this volume of sediment was displaced in the Narrows, the pile would be 2.5m high and 100 m wide along both sides of the 12 km Narrows. To put it in perspective, a total of about 6.5 m cubic metres was dredged at the Murray Mouth over a course of 8 years and this was a 24/7 operation.
- For this large effort, the modelling showed negligible benefit to Lake Albert, and under high wind conditions there was a negative impact to Lake Albert salinity.
- Dredging could cost around $120 m and the Narrows would require ongoing maintenance.

Lakes Cycling

- Community generally see this as slow and non-effective process
- Modelling showed Lakes Cycling would benefit Lake Albert salinity
- Minimal costs associated with Cycling. Specific costs are yet to be determined

Coorong Connector*

- Some general community support; Ngarrindjeri specifically do not support any engineering intervention

- Modelling shows it to be technically feasible in reducing Lake Albert salinity within the shortest timeframe, under the Basin Plan.
- A channel was selected over a pipeline due to construction cost, maintenance and overall footprint
- Dredging would be required 200 m into Lake Albert and 700 m into the Coorong to achieve the necessary invert levels to provide the required flow of 1 GL/day, up to 300 GL/year
- There are significant legislative requirements for this option
- The pre-feasibility cost estimate is $19 m +/- 30 % for a channel from Bascombe Bay to the Coorong (see the alignment below)
- The benefit cost is 0.30 to 0.41
- For the project to breakeven, irrigation would have to increase to around 5,500 Ha. The historic peak was 2,801 Ha in 2005 and the current figure is 400 Ha.
- Otherwise, the environmental, social and cultural benefits would need to equate to $13.12m to $15.12m in addition to irrigation increasing to 1980 Ha or 1320 Ha respectively.
- It is likely that Lake Albert would return to its historical salinity range by the time a Connector could be constructed and in operation.
- Coorong Connector is most useful in a recovery situation following drought. However, the Basin Plan reduces the frequency and duration of high salinity events anyway.
- As a contingency emergency measure should the Basin Plan not maintain Lake Albert salinity levels under extreme conditions not previously experienced, 'temporary reset pumping' could be implemented following a significant drought event. A temporary measure would have less environmental and cultural impact.

Alignment 2 runs from Bascombe Bay in Lake Albert to the Coorong and would be the preferred location

For more information

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*Management actions included as part of the Meningie Narrung Lakes Irrigators Association's 5 Point Plan. The other management actions in the Plan are Removal of Narrung Bund (completed) and return of flows to the South Lagoon of Coorong (part of the South East Flow Restoration Project).