




## Getting the Best out of Your ICOLL

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### Lake Tabourie ICOLL

- > Within Shoalhaven City Council LGA (NSW)
- > Lake Tabourie Township
- > Intermittently Closed and Open Lake or Lagoon

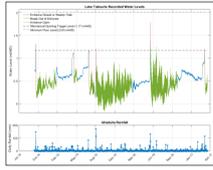



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### ICOLL processes

- > Entrance condition (open or closed) is a balance between:
  - Rainfall & freshwater inflows → try to keep lake open
  - Tides & waves → try to keep lake closed;
- > Water level of the lake changes due to:
  - Open → tides
  - Closed → rainfall & evaporation

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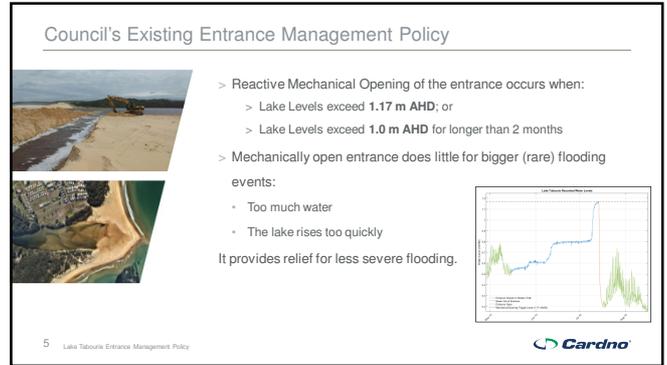
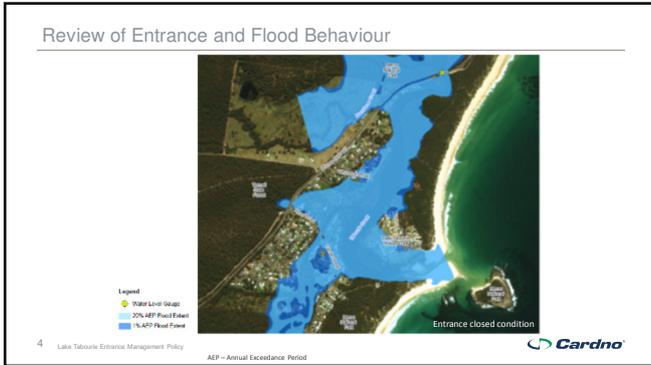
### ICOLLs can be sensitive for communities

Community often calls for ICOLL entrance opening:

- ✓ Reduce flooding
- ✓ Flush lake with 'clean' water from the ocean




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### Study Objective

#### Update Entrance Management Policy for Lake Tabourie

**What are we trying to achieve?**

- > Avoid & reduce nuisance flooding
- > Maintaining natural processes of the lake as much as possible

[State ICOLL Management Policy](#)  
 "The Department of Industry (Fisheries) supports minimal interference with ICOLL entrance barriers and advocates natural processes being allowed to operate to the greatest extent possible"

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### Entrance Management Policy Review and Update – integrated approach

1. Review of:
  - flood and entrance behaviour
  - relevant government policies
  - environmental values
  - social values
2. Development of potential entrance management options
3. Assess options to identify best solution
4. Prepare a new EMP for Council

Community Engagement

**Community engagement**

- Workshop various management options
- Vote for their preferred option through survey
- Presentation of results before public exhibition

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### Key Terms

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### Six management options developed and assessed

**Option 1**  
Do nothing – no interference

**Option 2**  
Existing approach  
Trigger level @ 1.17m AHD

**Option 3**  
Raise trigger level  
@ 1.3m AHD

**Option 4**  
Manage berm level  
'dry notch'

**Option 5**  
Permanently open entrance

**Option 6**  
Pilot channel at entrance before the storm

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### Multi-criteria Options Assessment

Community Engagement

**1. HOW DOES IT SCORE AGAINST MAIN CRITERIA?**

Environmental	Social	Policy
<ul style="list-style-type: none"> <li>Impact on natural physical processes (tidal regime)</li> <li>Impact on ecological processes (seagrasses and critters)</li> <li>Sustainability under a climate change (sea level rise)</li> </ul>	<ul style="list-style-type: none"> <li>Level of risk to infrastructure and property (e.g. from flooding)</li> <li>Impact on recreational amenity, public access and public safety</li> <li>Level of community support, based on the community survey results</li> </ul>	<ul style="list-style-type: none"> <li>Compatibility with the policy and legislative framework</li> </ul>

Impacts on flood levels and duration of inundation of the lake (modelling)

**2. WHAT IS THE COST (NOW AND INTO THE FUTURE)? \$\$\$**

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### Multi-criteria Options Assessment

Option Description	Environmental			Social			New Benefit Index	Preliminary Estimate of Capital Cost	Preliminary Estimate of Recurrent Cost	10 Year Net Present Value	Benefit Cost Index	Rank	
	Impact on natural physical processes	Impact on ecological processes & sustainability	Impact on infrastructure & property	Impact on recreational amenity, public access & safety	Community support	Compatibility with policy & legislative framework							
Option 1 - Do nothing	0	0	-1	-3	-2	-1	0	\$ -	\$ -	\$ 0	-1.7	5	
Option 2 - Current approach (trigger @ 1.17m AHD)	-1	-1	-2	2	0	1.5	1	0	\$ -	\$ 7,500	\$ 52,677	-0.1	2
Option 3 - Raise trigger level (trigger @ 1.30m AHD)	-1	-1	-1	2	0	2	2	3	\$ -	\$ 5,000	\$ 35,118	-0.7	1
Option 4 - Dry notch	-1	-1	-2	1	0	2	1	0	\$ -	\$ 15,000	\$ 105,354	-0.5	3
Option 5 - Permanently open entrance	-3	-3	-3	-2	0	0	-1	-14	\$ 5,000,000	\$ 5,000	\$ 5,035,118	-8.4	6
Option 6 - Pilot channel	-2	-1	-2	3	-1	1	1	-1	\$ -	\$ 10,500	\$ 73,748	-0.2	4

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### Top 2 recommended options from assessment

<p><b>No. 1</b></p> <p><b>Option 3</b> Raise trigger level @1.3m AHD</p> 	<p><b>No. 2</b></p> <p><b>Option 2</b> Existing approach Trigger level @ 1.17m AHD</p> 
<p>&gt; Environmental criteria:</p> <ul style="list-style-type: none"> <li>• Relatively low impact on natural processes</li> </ul> <p>&gt; Social criteria:</p> <ul style="list-style-type: none"> <li>• Low levels of risk to infrastructure and property</li> <li>• Highest level of community support</li> </ul>	<p>\$\$ Relatively low management costs for Council</p>

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### Split in community

<p><b>No. 1</b></p> <p><b>Option 3</b> Raise trigger level @1.3m AHD</p> 	<p><b>No. 2</b></p> <p><b>Option 2</b> Existing approach Trigger level @ 1.17m AHD</p> 
<p>Overall more community support</p> <ul style="list-style-type: none"> <li>- Environmental aspects</li> <li>- Acceptance of living in flood prone area</li> </ul>	<p>Low lying parts of community favours this option</p> <ul style="list-style-type: none"> <li>- Broader Flooding issues (FPRMP outcomes)</li> <li>- Personally impacted especially who live in 'house on piles'</li> </ul>

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### Mechanical Opening Process

Lake opening occurs when:

- Lake Levels exceed **1.3 m AHD**; or
- Lake Levels exceed **1.0 m AHD** for longer than 2 months

AND

- Non-breeding season for threatened shorebirds, or clearance from NPWS has been obtained

Other desirable aspects

- Continue moderate to heavy rainfall
- relatively Large ocean tidal range
- Opening coincide with falling tide
- Relatively low wave action



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### Final words...

- > ICOLL entrance management could be adopted as an interim measure
- > Community engagement important in process for:
  - Education of the relevant processes for ICOLLs
  - Create mutual understanding
  - Develop support




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Thank you

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