

### **MEETING MINUTES**

### WEDNESDAY, 27 JULY 2022 AT 5.30 PM LEVEL 9 FUNCTION ROOM, ADMIN BUILDING , WCC COUNCILLOR ANN MARTIN (CHAIR)

MEMBERS PRESENT		
Cr Ann Martin, Chair	Carla Ganassin, DPI Fisheries	
Cr Elisha Aitken, WCC	Nathan Harrison, Sydney Water	
Mayor Chris Homer, SCC	Brian Jones, Scientific Advisor	
Cr John Davey, SCC	Chris O'Connor, WCC staff	
Morgan Branding, NPWS	Renee Winsor, WCC staff	
Aimee Beardsmore, DPE – EHG	Natalia McGregor, SCC staff	
Aara Welz, ILALC	Leslie Reid, SCC staff	
Jess Whittaker, WCC Community Rep	Sasho Srbinovski, WCC staff	
Sharon Tomamichel, SCC Community Rep	Flora Lepouras, SCC staff (presenting)	
Warren Goodall, SCC Community Rep	Chelsea Yakovenko, SCC staff	
Chris Stewart, WCC staff	Colin La Flamme, WCC Community Rep	
Matthew Apolo, SCC staff	Snez Maljanovska, WCC staff (minute taker)	

ONLINE ATTENDANCE			
Graham Towers, DPE	Jessica Faustini, WCC staff		
Jocelyn Dela Cruz, DPE			
Belinda Davies, LLS			
Helen Wheeler, Crown Lands			
Martine Fraser, WCC staff			

### ITEM 1 Welcome and Introductions

The Chair opened the meeting, welcomed committee members and thanked them for their attendance.

### ITEM 2 Apologies

Apologies were received and accepted on behalf of -

- Cr Linda Campbell (WCC).
- Cr Lou Stefanovski (SCC).
- Daniel Wiecek (DPE).

### ITEM 3 Acknowledgement of Country

The Chair acknowledged the traditional owners of the Land.

### ITEM 4 Declarations of Interest

Colin La Flame declared an interest as subcontractor to bush restoration contractors around the lake.

It was determined that living opposite the lake shall not be categorised as a conflict of interest in this setting unless specific projects directly impact on landholders.

### ITEM 5 Presentation - Code of Conduct

Flora Lepouras, Executive Manager at Shellharbour City Council (SCC) presented on Code of Conduct Responsibilities to the Group. A copy of this information has been included as an attachment to the minutes (Attachment 1).

Flora Lepouras and Lisa Davey (Governance Manager, SCC) are available for questions when they arise and can be contacted by email.

A discussion was had about how to appropriately share information received at the Lake Illawarra CMP Implementation Group (the Group) meetings with the broader community. Any items to be considered confidential will be made clear before they are shared with the Group.

### ITEM 6 Presentation – Lake Illawarra Coastal Management Program Background

Renee Winsor, Environment Planning Manager at Wollongong City Council (WCC) presented on Lake Illawarra Coastal Management Program (CMP) Background to the Group. A copy of this information has been included as an attachment to the minutes (Attachment 2).

A discussion was had regarding how climate change was considered in the Lake Illawarra CMP. Following this the Group discussed what is being done to update data used in the CMP that may be considered out of date. Several actions in the CMP call for collection of data, for example action FB3 bathymetric survey of lake Illawarra calls for the update of bathymetric data, which was last collected in 2008.

### ITEM 7 Project Management Team Update

Chris Stewart, Manager City Strategy at Wollongong City Council (WCC) presented a Project Management Team (PMT) Action Update to the Group.

Chris O'Connor, Business and Infrastructure Strategy Manager (WCC) presented slides related to the Entrance Channel Options Study. Slides show a heat map which has been developed by the consultants, showing sediment loss and gain within the channel, estimating from 2019-2021 the channel has a net loss of 205,000 cubic metres.

Leslie Reid, Senior Coastal Officer (SCC) presented slides related to Reddall Reserve Promenade Upgrade and the EPA Litter Grant and community event.

A copy of this information has been included as an attachment to the minutes (Attachment 3).

Following this presentation the Group discussed further detail on specific CMP projects including water quality monitoring, the entrance channel option study, and the litter grant.

### ITEM 8 Project Update – Risk-based Framework for Lake Illawarra

Jocelyn Dela-Cruz, Principal Scientist – Metrics and Forecasting at DPE Environment and Heritage Group gave a project update to the Implementation Group on the status of CMP action WQ1 Implement a Risk Based Stormwater Management Framework for the Lake Illawarra catchment and updated the Group on the progress of the DPE NSW Water Quality Objectives project, focusing specifically on Lake Illawarra. Jocelyn leads a small team that specialises in providing a scientific evidence base for the practical development and delivery of environmental and planning policies for the NSW Government. Their primary focus is on policy protecting and restoring community / environmental values and uses of NSWs waterways. This is closely linked to the water quality and health of these waterways.

A copy of the presentation has been included as an attachment to the minutes (Attachment 4).

The Group discussed the appropriateness of seeking further support from the NSW Government for continuing this project.

### ITEM 9 State Government Grants - Upcoming Opportunities

Aimee Beardsmore DPE – EHG informed the Group that the Minister may soon announce the next round of Coast and Estuaries Grants.

### ITEM 10 Group Member Updates and Agenda Item Requests (Round Table)

Helen Wheeler, Crown Lands is waiting for Berkeley Boat Harbour summary of community consultation, which will inform the master planning process.

Matthew Apolo, SCC informed the Group that a Council resolution from SCC to provide a report to the Implementation Group outlining the steps required to commence action RA6 (to investigate the need for, and viability of, larger scale dredging of bays and the entrances to creeks or other measures to improve recreational amenity and access within Lake Illawarra). This report will be tabled at the next meeting.

Chris Stewart, WCC – the WCC Aboriginal community representative on the Implementation Group is nominated by WCCs Aboriginal Reference Group however this Reference Group has not yet reformed after being reviewed, it is due to reform in September and an Aboriginal Community Representative will be nominated at its first meeting.

A draft "Contacts" list for the Group has been developed with the intent to distribute. This list includes email address and phone numbers. Before this list is distributed can it be confirmed that there are no objections to sharing contact details.

No objections were made.

For Councillors enquires, Shellharbour Councillors shall direct them to Matthew Apolo and Wollongong Councillors to Chris Stewart.

### ITEM 11 Other Business

The location of the meeting changed yearly, WCC and SCC take turns hosting and Chairing. Request to hold future meetings in Level 10 Council Chambers due to technology issues in the Level 9 Function Room.

A meeting schedule for the next three meetings will be distributed with the minutes.

### ITEM 12 Next Meeting

The next meeting of the Implementation Group is scheduled to be held 19 October 2022.

### ITEM 13 Close

Meeting closed 7:40pm.

### **ACTION SUMMARY**

Item	Action	Officer	Status
7	Call for volunteers from the community, opportunity to stage stalls, e.g., educational resources for kids, library and Bushcare etc.	All	Complete
8	Staff to review engagement opportunities for the risk-based framework initiative and make representation regarding affordability implications for housing and the need for State Government investment to reduce any cost burden.	Chris Stewart Renee Winsor	
10	Discuss appointing a temporary WCC Aboriginal Community Representative until the WCC Aboriginal Reference Group is reformed.	All	
10	Staff to send the Lake Illawarra CMP Implementation Group Contact List with the Minutes.	Jess Faustini	
11	Staff to send meeting schedule for the next four meetings with the Minutes.	Jess Faustini	







### Code of Conduct

The Code of Conduct sets the minimum standards of conduct for all council officials and applies to:

- Councillors
- Staff
- Council Committee Members, Delegates of Council and Council Advisors





# General Conduct Obligations

### You must:

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- act lawfully and honestly and exercise care and diligence.
- Consider matters consistently, promptly and fairly and in accordance with procedures
- Ensure decisions are properly made and that all parties are dealt with fairly
- Take care of your own and others' health and safety





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# General Conduct Obligations

You must not conduct yourself in a way that:

- Will bring the councils into disrepute.
- Is contrary to law and council policies.
- Is improper, unethical or an abuse of power.
- Involves misuse of your position for personal benefit
- Constitutes harassment or bullying or is unlawfully discriminatory
- Is intimidating or verbally abusive





### Conflicts of Interest

- You have an obligation to disclose conflicts of interest
- Management of conflicts of interest will depend on what type of conflict of interest you have:
- pecuniary
- non-pecuniary (significant and not significant) as outlined in the Code of Conduct





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### Conflicts of Interest

interest they have in any matter being dealt with by Members of this group must disclose any pecuniary the group at each meeting that the matter arises and leave the meeting while the matter is being considered and voted on.





### Gifts and Benefits

- A gift or benefit is something offered to or received by you, or someone closely associated with you, for personal use or enjoyment.
- Key principles:
- and any other benefits you receive as a delegate or other than through the remuneration, if relevant, You must not benefit personally from your work committee member.
- nfluenced as a result of the receipt of a gift or You must not be influenced or be seen to be personal benefit.





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### Access to Information and Council Resources

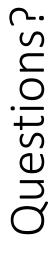
- You must only access and use information you receive as part of this group for business related to the group.
- You must not use council information for private purposes.
- You must not seek to privately benefit from any council information you have obtained in your role.
- You must only release council information in accordance with council policies and procedures and in compliance with relevant legislation.



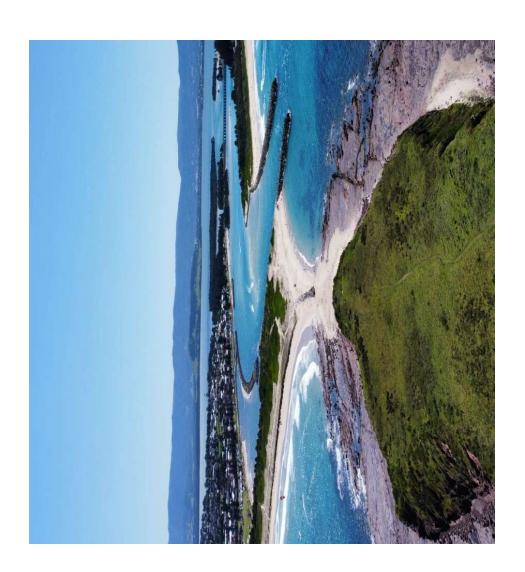
### Confidentiality

any confidential or personal information you have access You must maintain the integrity and security of to. In particular, you must:

- that you have been authorised to access and only for only access confidential or personal information the purposes of performing your functions
- protect confidential and personal information
- only use confidential or personal information for the purpose for which it is intended to be used
- only release confidential or personal information if authorised







### Lake Illawarra Coastal Management Program (CMP)

I BEGIN TODAY BY ACKNOWLEDGING THE DHARAWAL PEOPLE, TRADITIONAL CUSTODIANS OF THE LAND ON WHICH WE MEET, AND PAY MY RESPECTS TO THEIR ELDERS PAST AND PRESENT. I EXTEND THAT RESPECT TO ABORIGINAL AND TORRES STRAIT ISLANDER PEOPLES HERE TODAY.





2000: natural entrance, with varying openin, position south or north of Windang Island



2009: trained entrance, with twin breakwaters and southern training wall fixing the entrance opening position.

Estuary Area: 35km<sup>2</sup>

Catchment Area: 240km<sup>2</sup>

Average Rainfall: 995,35mm

2018/19 Rainfall: 660mm



2017: Mangroves establishing in bay adjacent to Pelican Park



2021: Mangroves in bay adjacent to Pelican Park

Images obtained from the Lake Illawarra Information Synthesis Report

### About Lake Illawarra

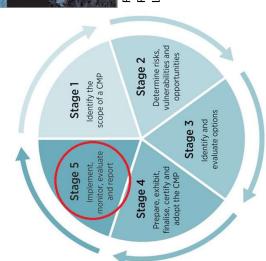
- Lake Illawarra is a large wave dominated barrier estuary system with a shallow flat bottomed bed.
- In its natural condition it was an ICOLL, intermittently closed or open lake or lagoon.
- Between 2000 and 2007, it was permanently opened.
- The entrance breakwaters have resulted in major geomorphic, hydrodynamic and ecological changes to the Lake.
- Lake Illawarra is in a state of transition towards more marine-like estuarine ecology in response to the permanently open entrance conditions and changed tidal regime.

## CMP Purpose and Process

- The CMP was developed following State Government Guidelines.
- It was prepared in accordance with the NSW Coastal Management Act 2016 following the five-stage risk management process outlined in the NSW Coastal Management Manual 2018.
- The Lake Illawarra Coastal Management Program is a guiding document to help Councils -
- Achieve the State Government vision for the NSW Coast
- Meet objectives set out in the Regional Plan
- Meet goals set out in the Community Strategic Plans

Strategic Instruments

Community Strategic Plans









### Protects, promotes and enhances

its natural environment



We value and profections converting

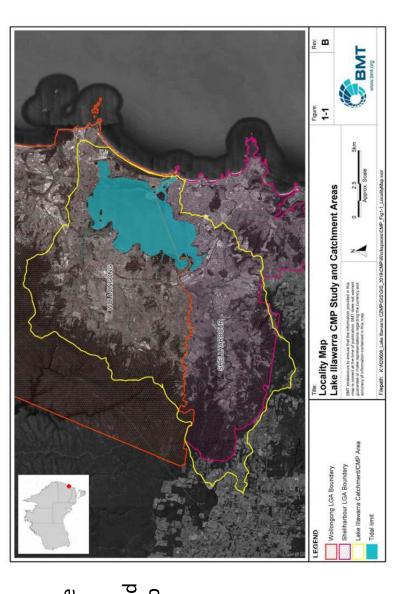




Thriving and resilient communities living and working on a healthy coast, now and into the future

### What area does the Lake Illawarra Coastal Management Program cover?

- This CMP covers the entire Lake Illawarra estuary and catchment as it affects the estuary, with a focus on the tidal part of the lake
- Macquarie Rivulet, Mullet, Brooks, Duck and Horsley Creeks and other smaller creeks) up to and immediately beyond their tidal limit
- downstream to the entrance channel
- all foreshore areas of the Lake
- the influence of the wider catchment areas where the directly impact on the coastal



Lake Illawarra Coastal Management Program 2020 - 2030





Manage the Entrance Channel





	Now	Future
Water pollution	Very High	Very High
Catchment development	Very High	
Changes due to entrance channel opening	Very High	
Loss of estuarine vegetation	High	High
Wetland degradation		High
Litter, plastics and marine debris		High
Contaminated sediments		High
Inappropriate / degraded / insufficient infrastructure		High
Loss of tangible and intangible cultural heritage		High
Foreshore development encroaching public land	Medium	Very High
Loss of riparian habitat	Medium	Very High
Foreshore and bank erosion	Medium	High
Climate change	Medium	High
Park management practices impacting adjacent natural areas	Medium	Medium
Commercial fishing*	Medium	Medium
Inefficient/ Incorrect Lake management	Medium	Medium
Introduced species	Low	Medium

Manage Foreshore and Bank Erosion and Sedimentation

nmercial fishing is managed by DPI Fisheries and changes to local fishing regulations are beyond the scope c

### Management Program Lake Illawarra Coasta! Improve Water Quality Improve Planning &



- The overall intent of the CMP is to work towards achieving ecological sustainability for Lake Illawarra over the long term
- Outlines 39 actions to be implemented over 10 years

Protect & Promote

taintain & Improve

- Actions are divided into nine management strategies that address the identified threats to the Lake
- Delivery of the CMP is estimated to cost \$36,340,000 over 10 years.



### **Determining CMP Actions**

Table 3-4 Cost Benefit Analysis Criteria and Scoring System

Capital Ongoing Effectiveness
Costs Costs per

STOP

- Audit of the previous management plans for the Lake
- A multi-criteria analysis process providing a threat mitigation score
- a cost-benefit assessment
- Recommendations developed during the CMP process
- Community and agency input including a formal exhibition period

7 7 0 Table 3-2 Threat Mitigation Potential Indirect negative Indirect positive Direct negative Direct positive No influence

**Example Threat Mitigation Score Process** Table 3-3

should impacts not government approvals the site / location occur, option would required to implement

No or minimal

Option can be easily adapted for future

Option will be very Is very politically effective in eliminating palatable, acceptable / reducing / to community, remediating its target Minimal education threat(s) required

Limited cost (<\$100,000)

9

Is likely to be technically viable at the site, but would require further investigations to clarify

assistance through existing Govt program; Will require Govt approvals to be implemented, or

knowledge / data Briefing to considerable cost about the threat OR Councillors, GM and effort Option will bring a community education

SLOW

Option will income would be palatable to recessarily reduce. Would be palatable to or received threat(s) but some, not others.

Cumulative Threat Mitigation Score (TMS) Weighted according to risk rating of threat	Very high (x4) High (x3) Medium (x2)	Low (c.t)		44
Introduced species	MOT			*
Commercial fishing	mulbeM	φį.		0
Park management practices impacting areas	mulbeM	influenc		~
Future climate change	mulbeM	= no		5
Foreshore and bank erosion	mulbeM	ce. 0		2
Loss of riparian habitat	Medium	Iffluent theor	١	2
Foreshore development encroaching public land	mulbeM	affive a		que.
Loss of tangible and intangible cultural heritage	цбін	of 10		~
Inspropriate / degraded / insufficient infrastructure	цбін	indire lueno	EV)	0
Contaminated sediments	чбін	1 0	on (	~
Litter, plastics and marine debris	цвін	uence Tegal	etat	~
Wettand degradation	цвін	ve inf	Veg	2
Loss of estuarine vegetation	чбін	positi = Ind	ariar	2
Catchment development	Mery High	phreci	Rip	0
Water pollution	ubin Nev	Ę.	and	~
Entrance channel changes	Фин Мел		arine	~
Action Descriptor	Risk Rating		Strategy 4: Protect and Rehabilitate Estuarine and Riparian Vegetation (EV)	Rehabilitate vegetation along lake foreshores and creek banks.
Ol notboA			Stra	EN

### Lake Illawarra Estuary Management Committee

- •The Lake Illawarra Estuary Management Committee (LIEMC) was a stakeholder committee of representatives from key government agencies, the community and scientific advisors.
- •This Committee was active from 2016 to 2021 throughout stages 1 4 of the 5 stage Coastal Management Framework
- •The LIEMC provided advice, feedback and support to both Wollongong and Shellharbour Councils in regards to the development of the Lake Illawarra Coastal Management Program
- Their purpose was directly linked to the development of the CMP



### Coastal Management Framework Moving from Stage 4 to Stage 5

 During this time three important factors were considered –

- Developing a good governance framework
- Memorandum of Understanding (MOU) between Wollongong City Council and Shellharbour City Council
- Integrating the CMP into IP&R

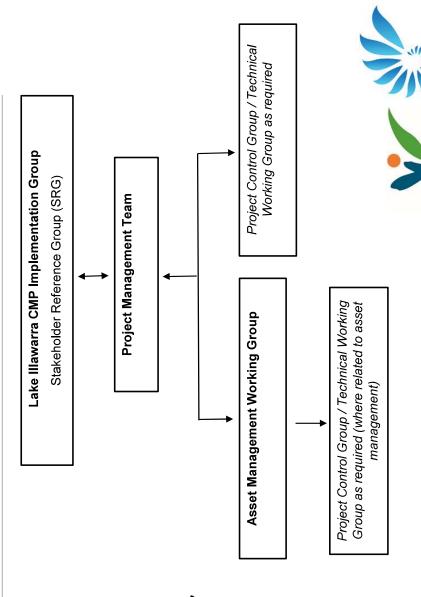


### Designing a Governance Framework for the Lake Illawarra CMP

- Design was guided by CMP action PM2 and the
- Include all CMP Stakeholders responsible and supporting of action implementation
- Consists of four groups -
- Lake Illawarra CMP Implementation Group,
- Lake Illawarra Project Management Team
- Asset Management Working Group
- Action Specific Technical Working / Project **Control Groups**
- Groups guided by specific Terms of Reference /

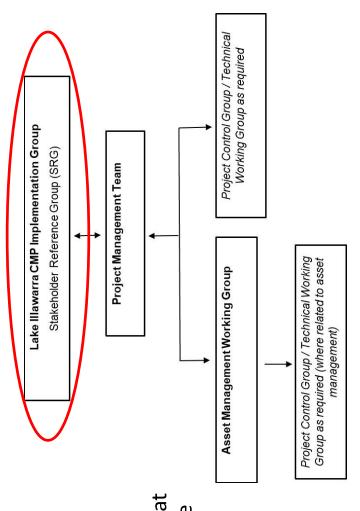
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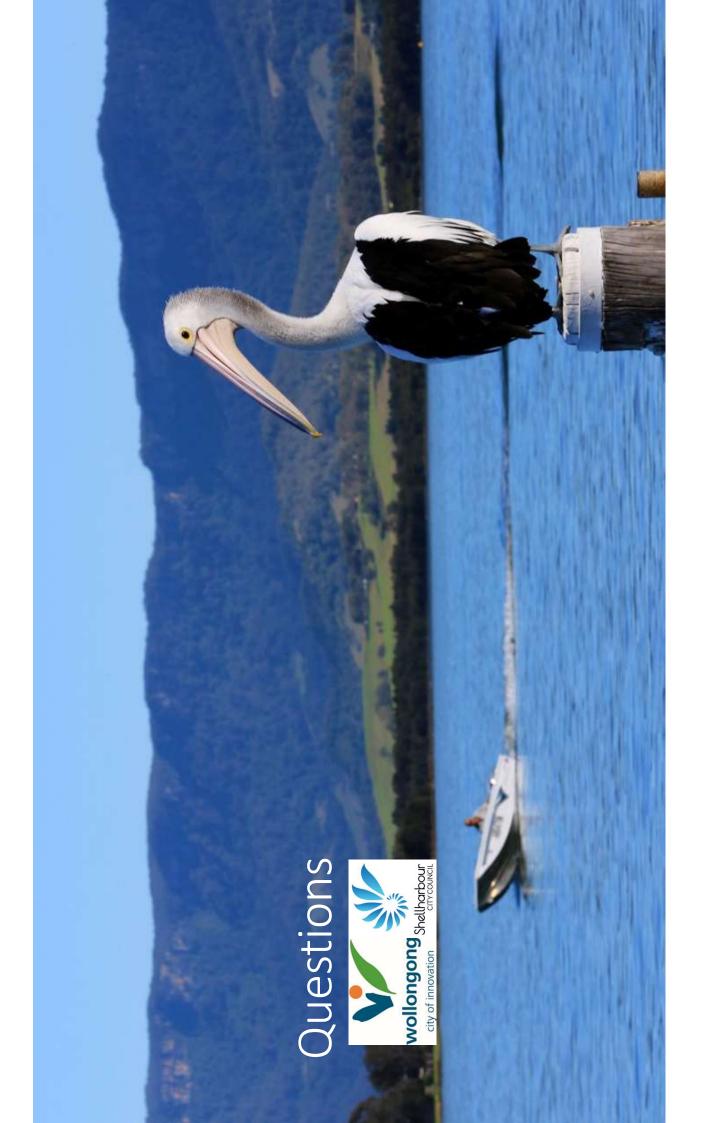
# CMP Implementation Group Purpose

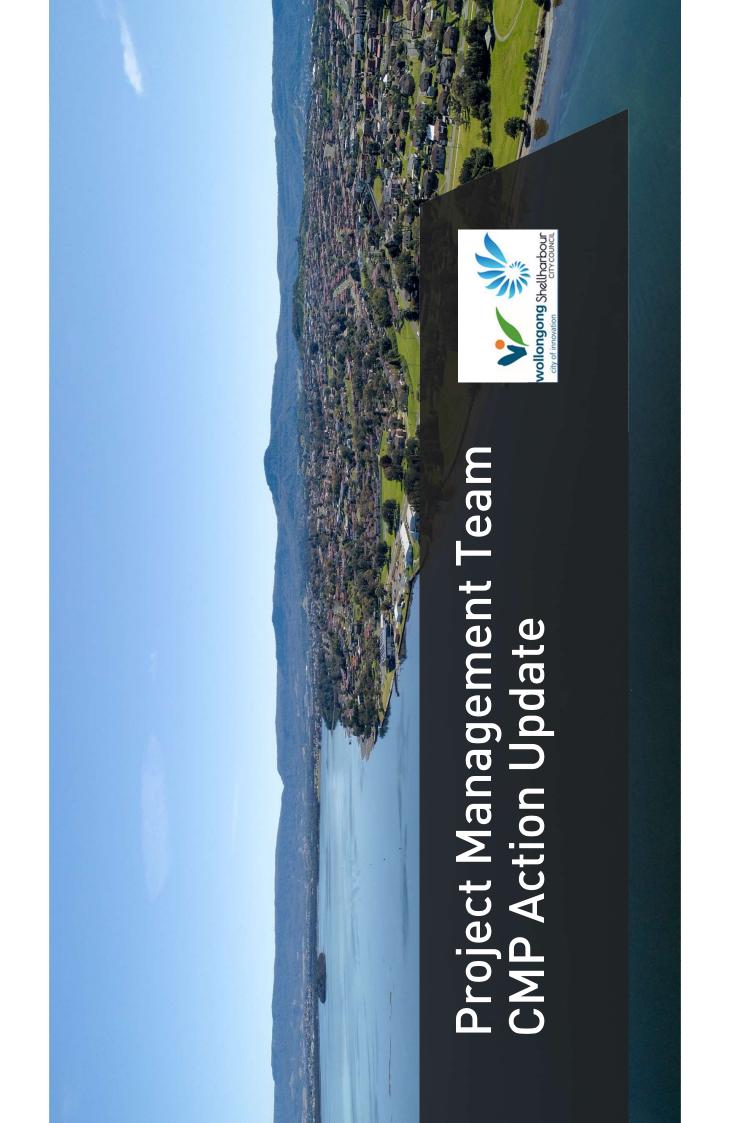
- The purpose of the Lake Illawarra CMP Implementation Group is to oversee and where needed, provide advice on the implementation of actions within the Lake Illawarra CMP
- •A platform for relationship building between all stakeholders, with the shared aspiration to ensure that Lake Illawarra's ecological, social, and economic value is maintained and improved now and into the future
- Stakeholders include Councillors, Community and State Government Agencies
- Operation is guided by the Terms of Reference



### Responsibilities and functions of the Group

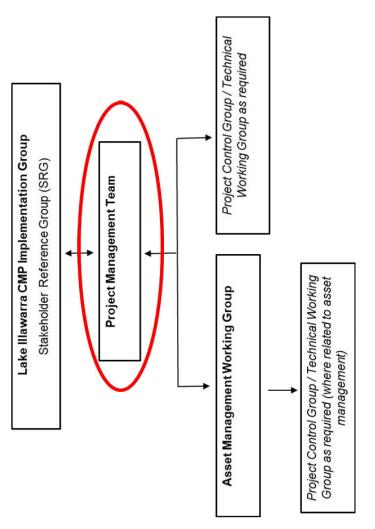
- Provide input into the implementation of specific actions within the CMP
- Assist both Councils and other relevant Lake Managers in overseeing the implementation of the CMP
- •Serve as an **important link to the community** and assist both Councils to communicate with the broader community by collaboratively sharing information received at meetings on the progress of CMP implementation
- Encourage community participation in implementation of CMP actions where relevant and appropriate
- Provide input and advice from the perspective of the community groups and/or organisations they are
- Reflect the concerns of relevant stakeholders and the broader community regarding implementation of actions
- Assist both Councils by **providing information regarding known threats** to Lake Illawarra that are identified in the Lake Illawarra CMP
- Routine operational and maintenance matters relating to Lake Illawarra will not be the business of the Lake Illawarra CMP Implementation Group. These matters are to be followed up using the Customer Service functions operating at the relevant Council or Agency.





# Context of the Project Management Team

- Purpose of the Project Management Team (PMT) is to guide and coordinate the implementation of the Lake Illawarra CMP from an operational and administrative perspective.
- It has six key activities and responsibilities, including but not limited to -
- Oversee operation of and provide updates to the Lake Illawarra CMP Implementation Group
- Provide advice to the CMP Implementation Group regarding prioritisation of actions under the CMP
- Oversee the implementation of CMP actions that are not the responsibility of the Asset Management Working Group.
- The PMT consists of relevant staff from WCC and SCC –
- City Strategy (WCC)
- Infrastructure Strategy and Planning (WCC)
- Built and Natural Environment (SCC)
- PMT has been meeting monthly since September 2021





## Snapshot Year 1 Actions

- The 2021/22 financial year is year one of CMP implementation in the Lake Illawarra CMP implementation plan (Section 4 of the
- The implementation of the CMP began before it was certified, however this marks the official end of year one implementation.
- Many actions are being undertaken in partnership between WCC, SCC and the NSW Government while others are being undertaken individually by the relevant Council teams or NSW Government Agencies.
- Actions being undertaken individually are done so in consultation with all relevant stakeholders.
- Of the 29 actions to be implemented in year one (or as required) of the CMP -
- 26 are underway,
- 1 has been delayed due to COVID lockdowns / inclement weather (now included in year 2),
- 2 have commenced early.

### Management Actions

Hopping controller con		
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Design and righerent great of and the service distributed tipold monitoring as required for development resulting in a large-scale orbating of manufaction of alact uses.  WAGE Recibe estimated that the total Large Principles of the control of the	WQ3	Review and prioritise maintenance and cleaning regime for existing stormwater quality devices
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House the entire transport of severe conflored control of properties and bacteric degree of inclosed control of properties of the control of properties and of properties of propertie	WOS	Reduce sediment load to the Lake by improving compliance with erosion & sediment controls for development sites.
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Accommended and partial grand Mahagement Arrangements for the Lake (PM)	WQ9	Investigate and manage potential pollution sources including contaminated sites that contribute to poor water quality in the take
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Interligible and Entire Channel (EC)	M4	Establish a Lake Illawarra Asset Management Working Group that provides coordination services for agencies that manage assets around the Lake Illawarra tonestore
Concessions and finales options to manage encoion and accretion changes in the entanos otherwise   Concessions and the concession manages of the concession of the concessio	trat	egy 3: Manage the Entrance Channel (EC)
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CEO Undertake are agregation, works or small cable no egyetek actions as required to mitigate known tisks to properly and public selety.  **Monitor and mention restricts channels**  **Total Sty 4.* Prociect and Rehabilitate Estuarine and Riparina Vogetation (EV)  **Rehabilitate evgletion and manage public access along the channes of processors and basks of the Liber. It introduces the processor and the control of the channes of processors and basks of the Liber. It introduces and deliver an informacin program for the Liber Calciforment, richards and processors and interest and delivers an informacin program for the Liber Calciforment in program for the Liber Calciforment in the Calciforment of the	22	Undertake small scale works (e.g. beach scraping, re-shaping ekc) to maintain swimming areas
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THORSON 4.5 Protect and Rehabilitate Estuarine and Ribarian Vegetation (EV)  Prehabilites everelion and manage public access along breakone and breaks of the Lake, the tributanee, islands and broader low-ying areas  The chindrene everelion and manage public access along breakone and breaks of the Lake, the tributanee, islands and broader low-ying areas indicement in committee to be conformed to the committee of	2 2	Monitor changes to the entrance channel.  Monitor and maintain autistic actions of some infrastructure with any under to be informed by ECL-ECS and ECA.
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trategy 9: Protect and Manage Key Fauna (MF)	88	Investigate novel solutions to manage inundation risks to assets such as stormwater, sever, and water; cycleways, roads and bridges, etc.
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### **Grant Funding**

- There has been great success in obtaining grant funding for implementation of actions in the CMP
- Funding bodies include the following NSW Government Agencies –
- Department of Planning and Environment (DPE) Coast and Estuary **Grants Program**
- Local Land Services (LLS)
- **EPA Litter Grants**
- DPI Fisheries Habitat Action Grants
- Over \$1.5M for joint projects has been awarded to Councils since the CMP was certified in December 2020
- This has lead to the commencement of 8 projects that address up to 14 individual CMP actions
- Some of these projects will be complete in the 22/23 financial year, while others span until 2024 and 2025
- Highlights from 21/22 are detailed in the following slides











### Health Monitoring Program Water Quality and Estuary

- Action WQ7 in the CMP carried out in partnership with WCC, SCC and DPE
- spanning from 2021 -2024 obtained through the NSW Grant funding of approx. \$230,000 over three years Government's Coast and Estuary Grant Program
- Water Quality Monitoring Project includes the following
- Monthly monitoring for estuary health at 11 sites
- Recreational water quality monitoring from October
  - April at 3 sites within the Lake
- Catchment water quality monitoring at 21 sites 5x/yr
- Capturing 4 wet weather events at 21 sites
- Links with the NSW Government Marine Estate **Management Strategy**



Estuary Health & Water Quality Report Card 2020-21











### Lake Illawarra Bank Management Strategy

- Action FB1 in the CMP carried out in partnership with WCC, SCC and DPE
- Grant funding of approx. **\$45,000** obtained through the NSW Government's Coast and Estuary Grant Program
- The purpose of this study is to characterise and map foreshore erosion and propose a Bank Management Strategy (BMS) for future management of the shoreline
- A project update on the Bank Management Strategy will be presented to the CMP Implementation Group at the next meeting
- Links with the NSW Government Marine Estate Management Strategy



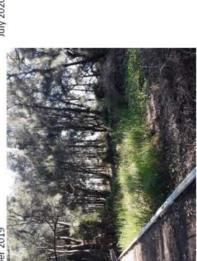


# Natural Area Restoration Works

- Actions EV1 and EV2 in the CMP carried out in partnership with WCC, SCC, DPE and Local Land Services
- Grant funding of approx. **\$445,000** to be used over several years spanning from 2019 -2024 obtained through the NSW Government's Coast and Estuary Grant Program
- Additional grant funding obtained from Local Land Services and DPI Fisheries
- Sites include Koonawarra foreshore, William Beach Park, Hooka Point, Holborn Park, Lake Heights foreshore, Primbee foreshore, Heritage Park, Picnic Island, Pelican View Reserve, Cec Glenholmes Oval, Horsley Creek and more
- Works include primary and maintenance weed removal, native plantings, and illegal vehicle access control











# **Entrance Options Study (I)**

- Action EC1 in the CMP carried out in partnership with WCC, SCC, Transport for NSW and Department of Planning and Environment (DPE)
- EC1 is to investigate and finalise options to manage erosion and accretion changes in the entrance channel.
- These issues have been exacerbated since the permanent opening of Lake Illawarra in 2007 impacts to foreshore land and infrastructure.
- Grant funding of approx. \$350k obtained through the NSW Government's Coast and Estuary Grant Program.



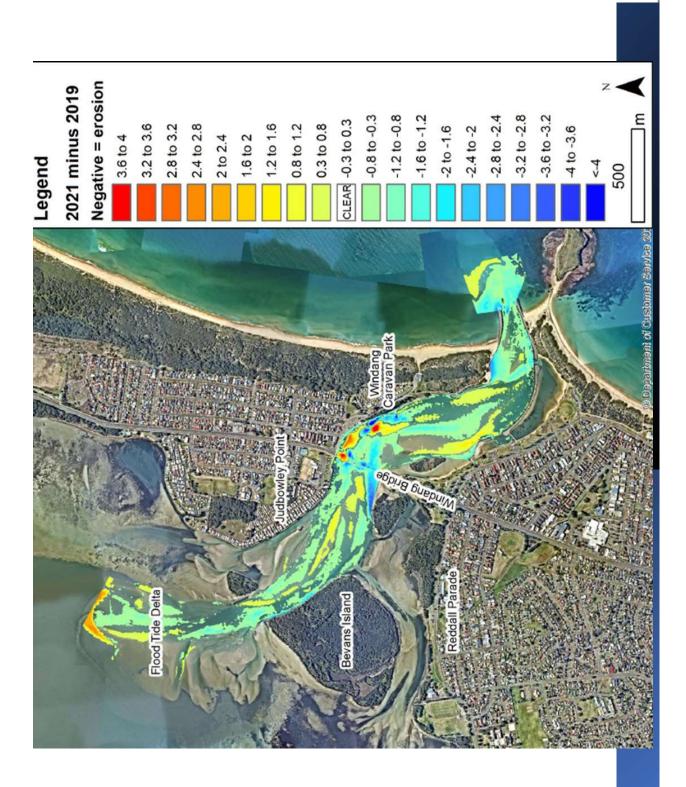


# **Entrance Options Study (III)**

- Project activities to date:
- Undertaken updated bathymetry surveys and tidal gauging.
- Preliminary modelling of the Lake Illawarra Entrance.
- Identification of potential management options for further investigation
- Future activities:
- Development of options short-list.
- Cost-Benefit Analysis (CBA) of short-listed options.
- Community Engagement (Currently Programmed For Early 2023)











### Moolawang Ngayagang Yanba Program

- Linked to action CH1 in the CMP
- A joint research and learning project from the Illawarra Local Aboriginal Land Council (ILALC) and the University of Wollongong, Southern Cross University and the University of Sydney
- Values based decision making; a Lake Illawarra pilot project. This project asks the question:

by the values and relationships that exist between humans and the environment in decision making?" "How can we better account for, consider and be guided

management, and Aboriginal ways of Caring for Country participated in a pilot program, run by the ILALC, which engaged participants with Aboriginal knowledges, · Lake Illawarra Estuary Management Committee Members, Council and State Government Staff Aboriginal culture, Aboriginal environmental











# Reddall Reserve Promenade Upgrade

- The existing promenade is a very popular site for locals and tourists but unfortunately the promenade has reached the end of its useful life. The Reddall Reserve Masterplan identified the promenade for renewal.
- Shellharbour City Council has received \$2.5MIL for the Reddall Reserve Promenade Renewal as part of the Public Spaces Legacy Program through the NSW
- Benefits of the Promenade upgrade include:
- Safe and accessible footpath connectivity.
- Enhanced foreshore recreational open space including ramp access to water's edge and
- Reclined seating along the foreshore offering unobstructed views along the water's edge.
- Improvements to protect the foreshore from erosion.





#### Timeline



Concept Designs prepared by landscape architect



The preferred tenderer will be considered by Council later



Construction due to start - estimated October 2022 Stage 3



(会) Stage 4

Construction complete





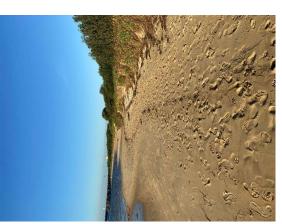
## Reddall Reserve Sand Scraping

- Coast and Estuary Grant funding was received to assist with sand scraping works along Reddall Parade, Kiyong Beach.
- The purpose of the works was to reduce the impacts of tidal movements and protect the banks from erosion and destabilisation.
- In May 2022, approximately 1200m3 of sand was moved, building up around 200m of foreshore
- Unfortunately, due to significant, on-going weather events such as heavy rain, high tides, ECLs etc, the sand has scoured out
- Lessons learnt have been discussed with DPE and Assets team to discuss how we can alter works in the future



After

Before







## Luv the Lake Litter Prevention Grant

- Action WQ8 in the CMP carried out in partnership with WCC, SCC and EPA
- Grant funding of **\$150,000** for the 2022/23 financial year obtained through the EPAs Litter Prevention Grants
- This project takes an integrated approach to litter covering cleaning, infrastructure, education and awareness, enforcement and community involvement
- Funding will be utilised for a temporary Litter Project Officer hosted by SCC, two large scale community clean up events, increase and improvements in litter bin infrastructure and enforcement blitz over summer





## Luv the Lake Community Event

- **Date TBD** Date changes occurring due to conflict with Food and Wine Festival
- Location: Pelican Park, Lake Illawarra
- Event: Large Scale clean up event along the lake Seaside Scavenge – funded through EPA Litter Grant
- What's on?
- Walk on Country / Welcome to Country event
- Lake wide clean -up
- Educational / environmental site tours
- Music, Food, Council Stalls
- Second hand store where you can trade 'Trash' for 'Treasure' (second hand items donated where you can 'purchase' with rubbish collected from your clean up
- Call for volunteers to assist with managing stations around the lake. If you're interested in being involved more, or know of other individuals or other groups who would be interested, please get in touch! Would love volunteer assistance
- Any other State Agencies in this groups, if you're interested in having a stall at the event, we would love to have you

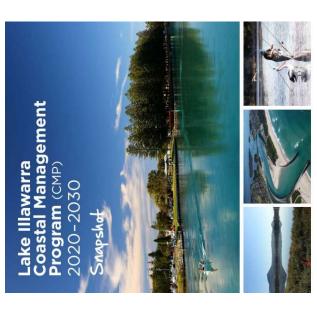






#### **Grant Funded Projects** Commencing in Year 2 2022/23

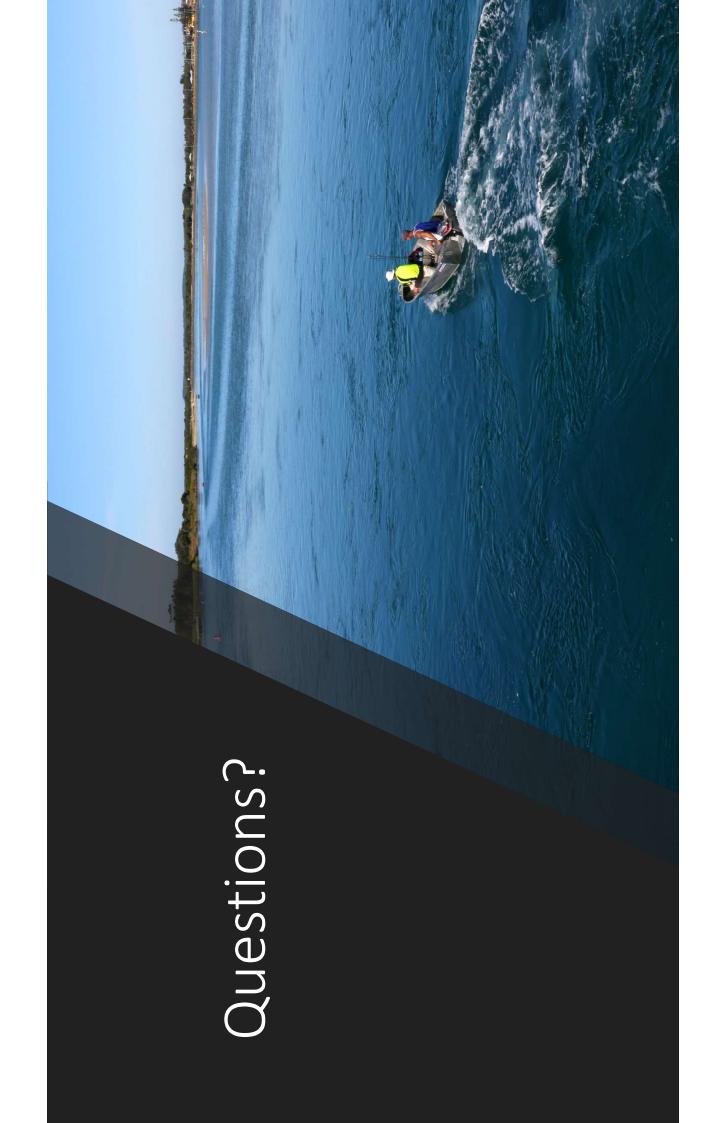
- Protecting Lake Illawarra through development and implementation of a Community Engagement and Participation Program
- Bathymetric Survey of Lake Illawarra
- Integrating the outcomes of the Lake Illawarra CMP into Wollongong and Shellharbour's DCP











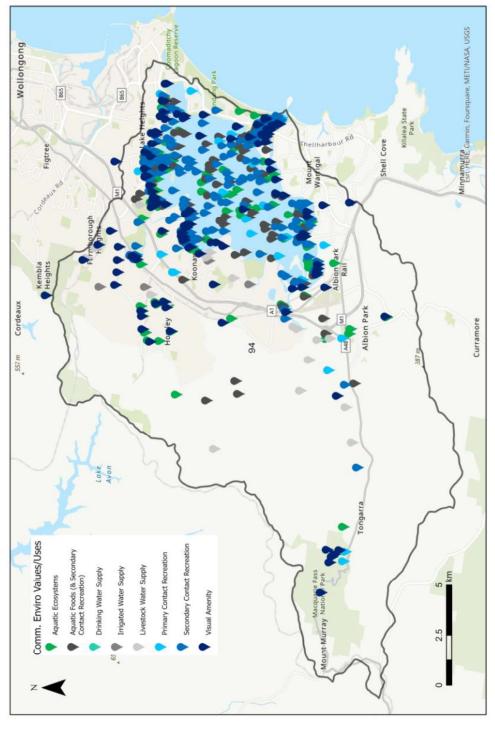




#### values and uses of Lake Protecting community llawarra using a Riskbased Framework

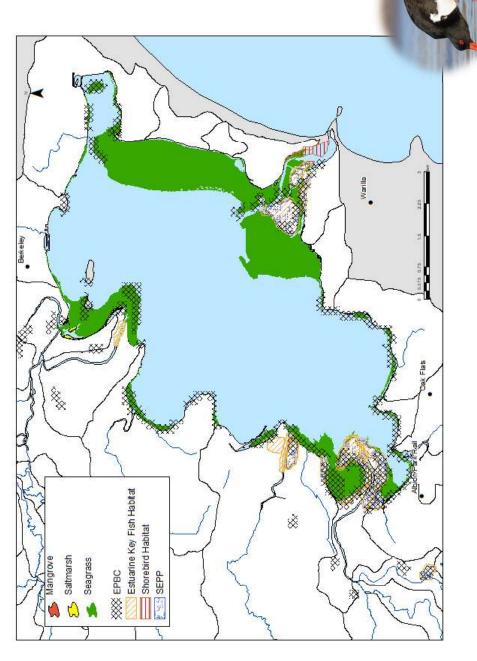
Jocelyn Dela-Cruz Principal Scientist

NSW GOVERNIMENT

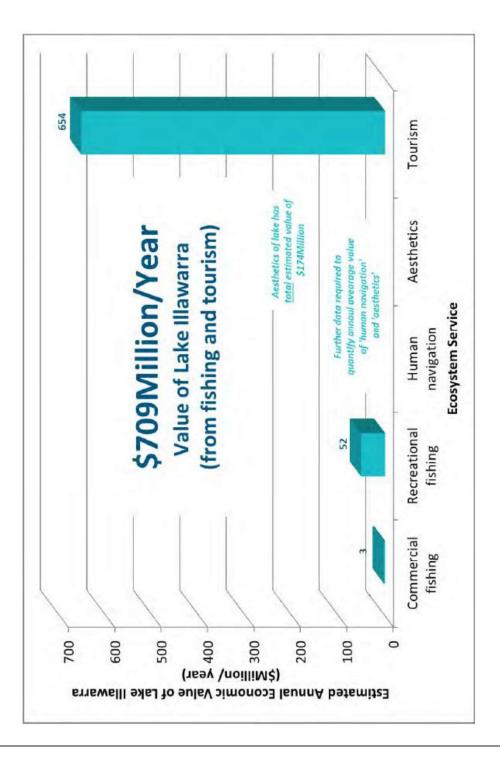


Community environmental values and uses of Lake Illawarra





Economic values of Lake Illawarra (annual estimates for 2015)







## Lake Health and Water Quality

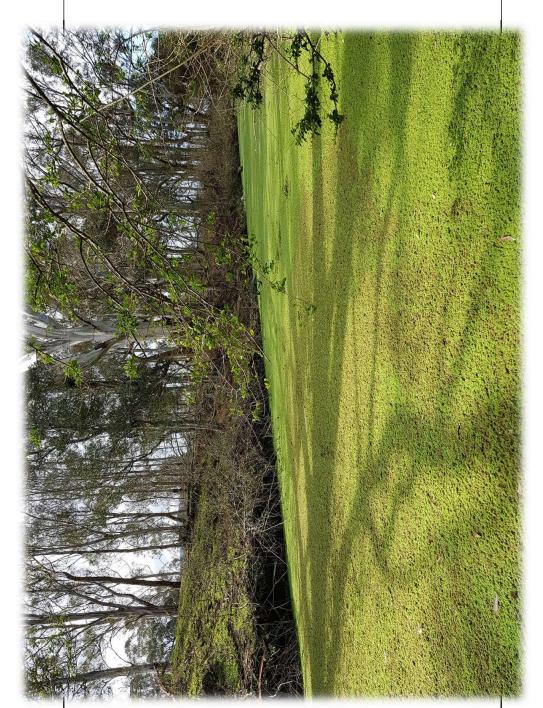












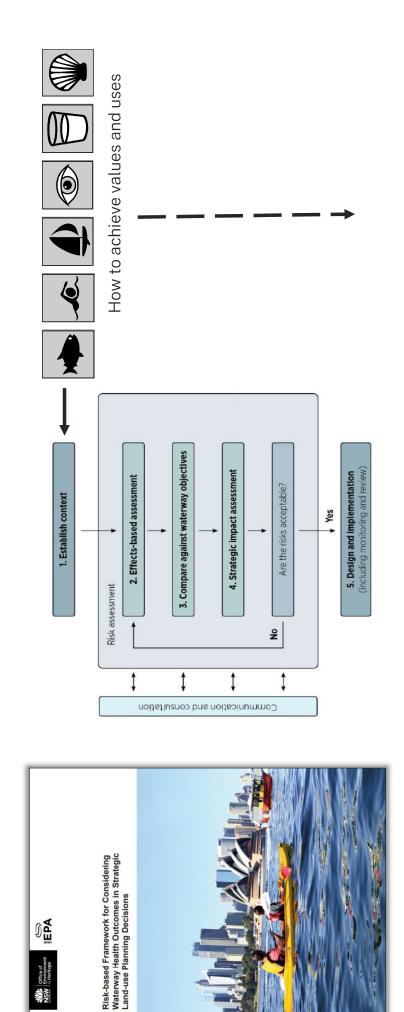
## NSW Water Quality Objectives (WQOs)



Goals for how communities use	<ul><li>waterways</li><li>Goals managing</li><li>cumulative impacts</li></ul>	
NUMERICAL CRITERIA	Numerical criteria represents risk of illness from contact with the water e.g. < 40 cfu/100ml indicates very good water quality for swimming	For example:  • Upland rivers: 20 µg/L  • Lowland rivers: 25 µg/L for rivers flowing to the coast; 50 µg/L for rivers in the Murray-Darling Basin  • Lakes & reservoirs: 10 µg/L  • Estuaries: 30 µg/L
INDICATOR	Enterococci (cfu/100ml) is measured to gauge whether a waterway is suitable for swimming	Chlorophyll a  Total Phosphorus Free Reactive Phosphorus  Total Nitrogen Ammonium Oxidised Nitrogen Dissolved Oxygen pH Temperature Turbidity Salinity Biological Indicators (macroinvertebrates, fish) Chemical contaminants or toxicants
COMMUNITY ENVIRONMENTAL VALUE OR USE	Primary contact recreation e.g. swimming	Protection of Aquatic Ecosystems



### Risk-based Framework



# Illawarra-Shoalhaven Regional Plan 2015





ACTION 5.4.2 Implement a risk-based decision-making framework to manage water quality and waterway health outcomes for Lake Illawarra

To help support and manage potential water quality impacts, the Environment Protection Authority and the Office of Environment and Heritage have developed a risk-based decision-making framework to integrate NSW Water Quality Objectives into the strategic planning process. This framework follows the risk-based methodology outlined in the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (2000 ANZECG guidelines), and focuses on setting management targets that meet the community's expectations of estuary health.

The Lake Illawarra catchment is a priority for this framework, given the planned urban growth in the lake's catchment, and increased pressure for recreational uses and foreshore access, particularly on the western side.

The NSW Government will:

- apply the framework through planning and infrastructure programming of development sites within Lake Illawarra catchment; and
- work with Councils on implementation with support from the Office of Environment and Heritage and other stakeholders.

ACTION 5.4.3 Implement a risk-based decision-making framework to manage water quality and waterway health for all coastal lakes and estuaries in the region where development is planned, with priority given to listed sensitive lakes and estuaries

The risk-based decision-making framework for Lake Illawarra, formulated by the Office of Environment and Heritage, can be used as a model for managing all coastal lakes and estuaries in the region where there is planned development. It will inform consideration of water quality outcomes in all strategic planning decisions for the region, consistent with the methodology in the ANZECC Guidelines.

The NSW Government will:

 apply a risk-based decision-making framework for all coastal lakes and estuaries. In the medium term, priority will be given to sensitive estuaries, which are susceptible to the impacts of land use developments (see Table 2).



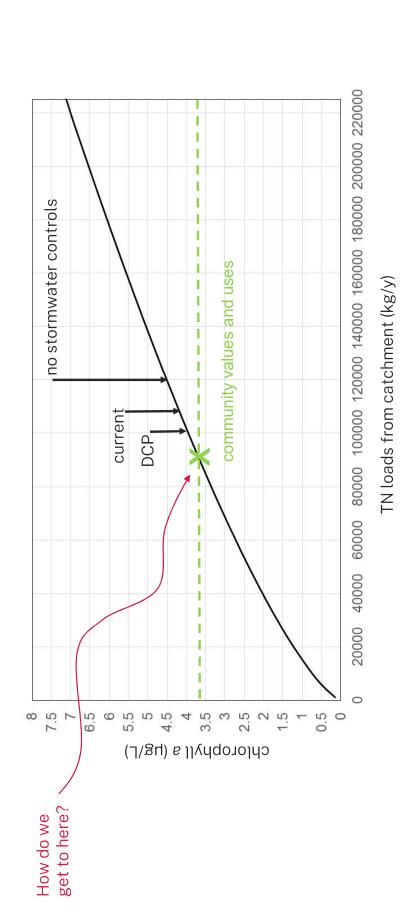
## Urban development in the catchment



Are current development controls for stormwater enough to protect community values and uses?

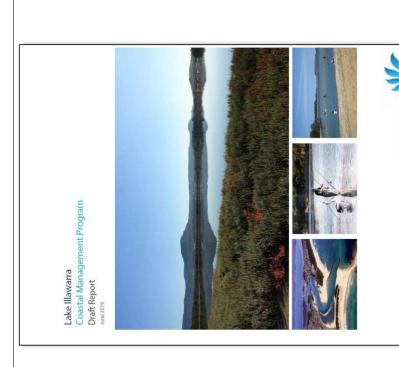


## Effectiveness of stormwater controls



## Coastal Management Program





Implement a Risk Based Stormwater Management Framework for the Lake Illawarra catchment



Councils to update DCPs and standard conditions of development consent to reflect the Risk Based Framework pollutant reduction targets as 'best practice'



Developers required to provide whole of life costings for treatment trains for DCP and Risk Based Framework targets

(trial 1 year, revise targets as needed)

Upgrade existing stormwater quality management measures, or install new devices, to improve water quality and enhance habitat and natural values (prioritise using Risk-based



wollongong Shellharbour

Framework)





### 1 MANAGEMENT OBJECTIVE

To improve water quality and reduce marine litter for the benefit of marine habitats, wildlife and community.



✓ NSW Government investment for Lake Illawarra \$200,000 (OPEX), plus in-kind staffing

### Post development load reduction targets



Council DCP:

85% TSS65% TP45% TN



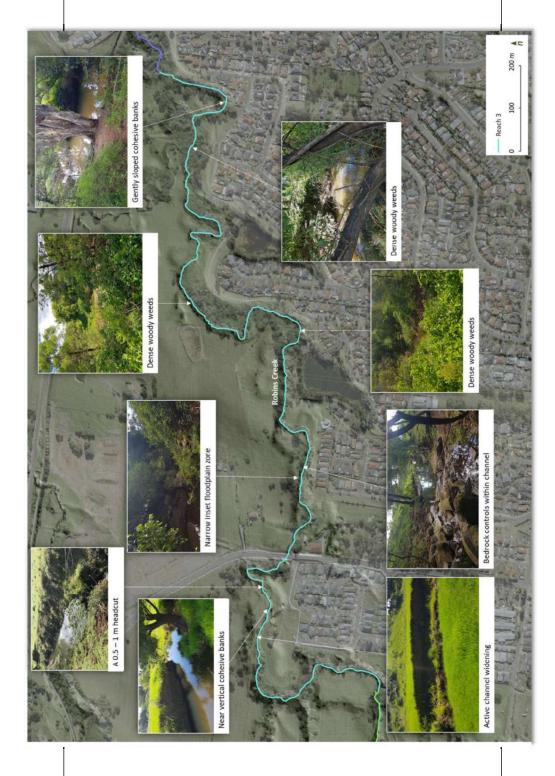
'Risk-based Framework targets':

82% TSS78% TP67% TN



### Study area

NSW GOVERNMENT





## Water Sensitive Urban Design

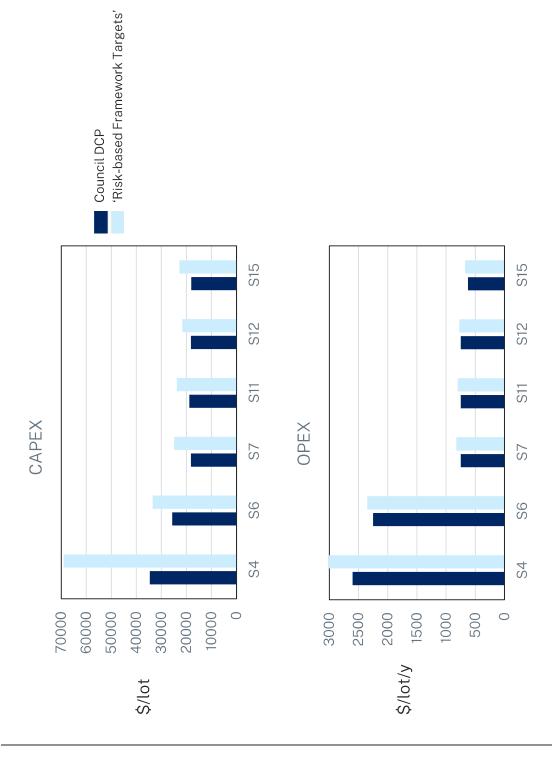


### Stormwater treatment trains



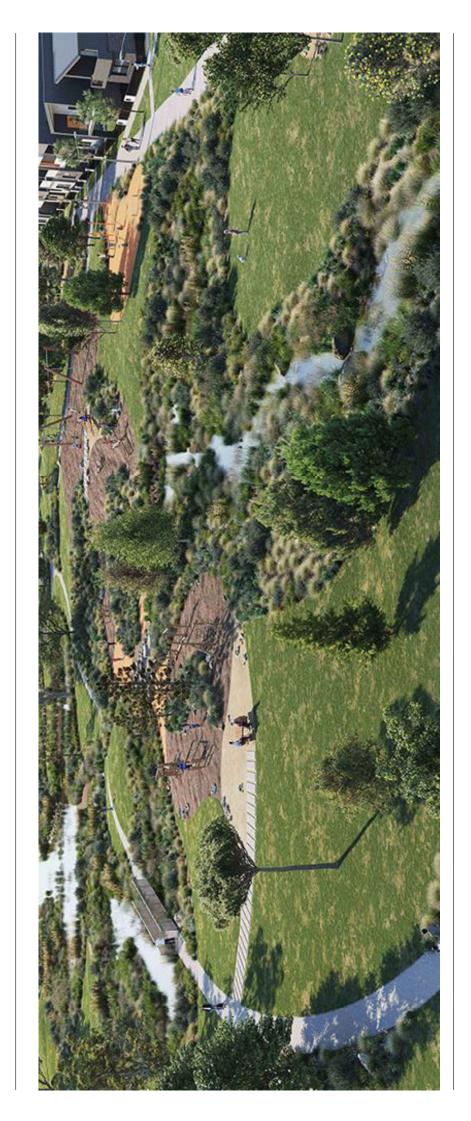
Stormwater management measure							ŭ	Scenario No.	No.						
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Stormwater drainage	>	>	>	>	>	>	>	>	>	>	>	>	>	>	>
Source planning controls		>													
Rainwater tank (BASIX)		>	>	>	>	>	>	>	>			>			>
Rainwater tank (BASIX x 1.5)										>			>	>	
Rainwater tank (BASIX x 2)											>				
Disconnect downpipe / rain chain				>	>								>		
Lot stormwater gardens				>	>								>		
Native landscaping		>		>	>								>		
Tree pit filters			>	>		`							>	>	
Infiltration pits and trenches		>											>	>	
Filter/buffer strips			>	>		>									
Vegetated swale					>	>	>			>	>	>			
Manual litter collection			>	>		>							>	>	
Street stormwater garden			>	>		>							>	>	
Urban forest		>							>						
Sediment forebay								>							>
Biofiltration basin								>							>
Constructed wetland															>
Ephemeral park					>	>	>		>	>	>	>			
Level spreader									>						
Revegetation / riparian planting		>							>						
Waterway remediation									>						
Offset retrofit												>	>	>	







# Regional systems relatively cost effective



### Decentralised systems provide other cobenefits





#### Wollongong City Council

### Wollongong City Council

Home / About Wollongong / Our Environment / Trees and Plants / Greening Your Suburb Home / What's On / News and Alerts / News / Rain gardens on their way to Wollongong

#### Rain gardens on their way to Wollongong

Wednesday 5 February 2020





Council is bringing more plants and trees to our streets and parks, and caring for the ones we already have, through our Urban Greening Program. We're also calling on the whole community to get involved in Community Greening.



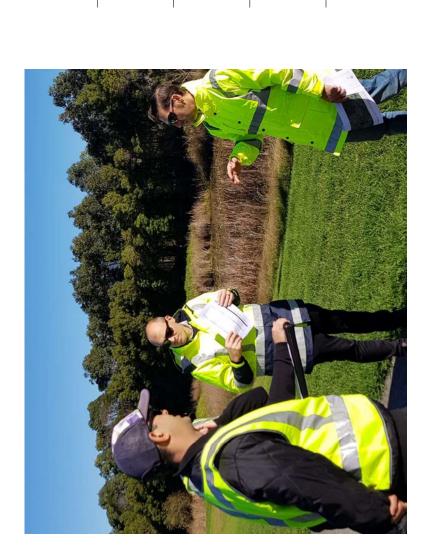
# Need for stormwater quantity (flow) targets



- Mean annual runoff volume
   90<sup>th</sup> percentile
   50<sup>th</sup> percentile
   10<sup>th</sup> percentile

### Next steps







Finish evidence base /studies





Consultation - EMC feedback?



Revised DCP and implementation



Capacity building (Marine Estate Management Strategy