

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) Lisa Davey
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	

Lake Illawarra CMP Implementation Group Code of Conduct Responsibilities

27 July 2022



Shellharbour
CITY COUNCIL



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:

- 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



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



Conflicts of Interest

- Members of this group must disclose any pecuniary interest they have in any matter being dealt with by 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:
 - You must not benefit personally from your work other than through the remuneration, if relevant, and any other benefits you receive as a delegate or committee member.
 - You must not be influenced or be seen to be influenced as a result of the receipt of a gift or personal benefit.





Access to Information and Council Resources

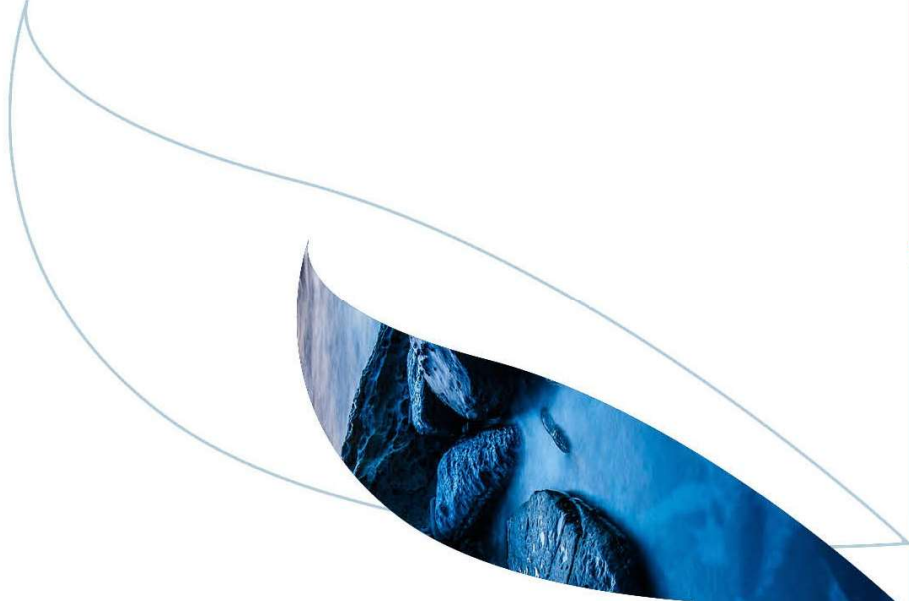
- You must only access and use information you receive as part of this group for business related to the group.
- You must not use council information for private purposes.
- You must not seek to privately benefit from any council information you have obtained in your role.
- You must only release council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



Confidentiality

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

- only access confidential or personal information that you have been authorised to access and only for 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

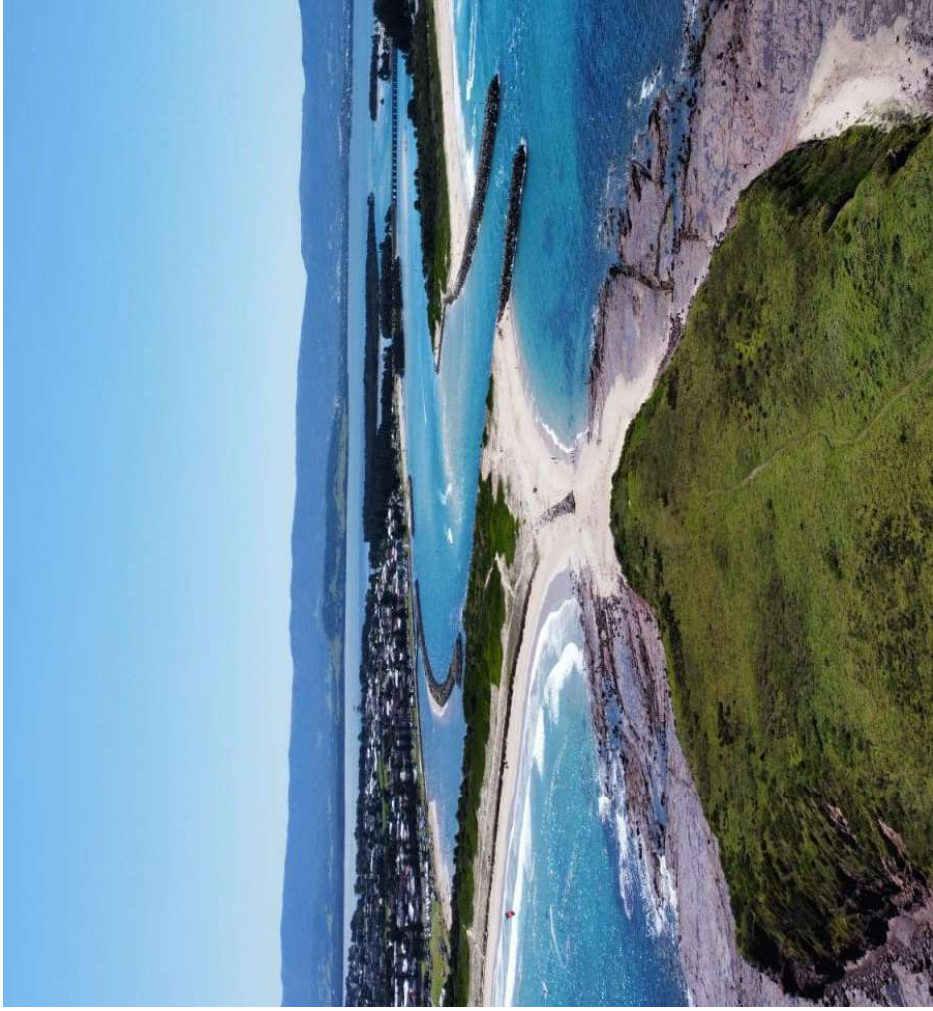




wollongong
city of innovation

Questions?





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 opening position south or north of Windang Island



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

Estuary Area: 35km²

Catchment Area: 240km²

Average Rainfall: 995.35mm

2018/19 Rainfall: 660mm

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.



2017: Mangroves establishing in bay adjacent to Pelican Park



2021: Mangroves in bay adjacent to Pelican Park

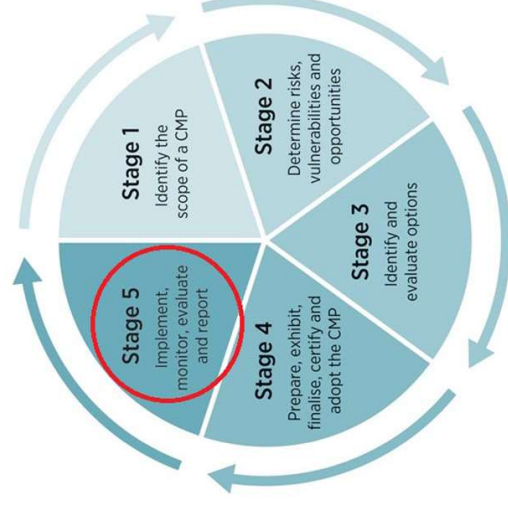
Images obtained from the Lake Illawarra Information Synthesis Report

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



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



Strategic Instruments

Community Strategic Plans



Figures

Right— The NSW Coastal Management Manuals
Left – Five stage risk management process for preparing CMPs



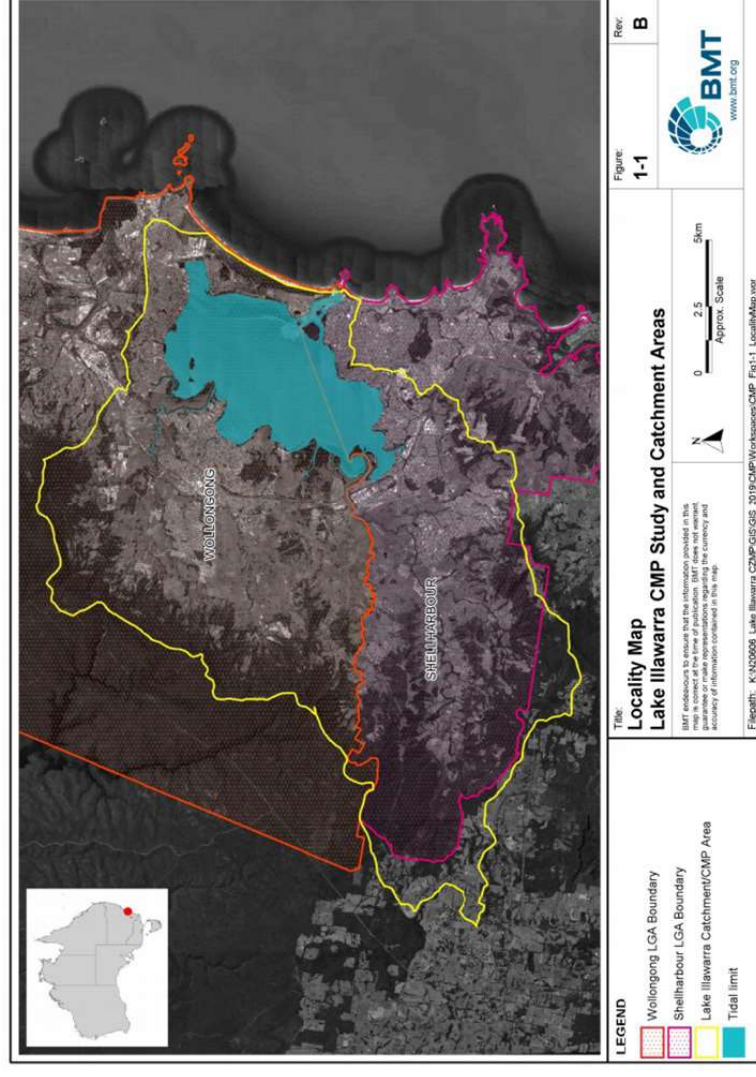
Protects, promotes and enhances
its natural environment

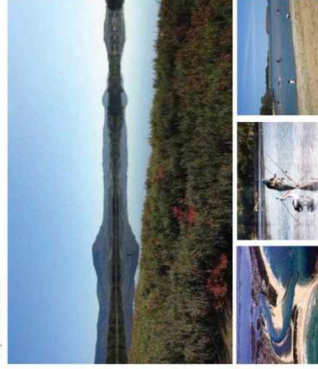


We value and protect
our environment

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 zone





Identified Threats to Lake Illawarra	Risk Rating	
	Now	Future
Water pollution	Very High	Very High
Catchment development	Very High	Very High
Changes due to entrance channel opening	Very High	Very High
Loss of estuarine vegetation	High	High
Wetland degradation	High	High
Litter, plastics and marine debris	High	High
Contaminated sediments	High	High
Inappropriate / degraded / insufficient infrastructure	High	High
Loss of tangible and intangible cultural heritage	High	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

*Commercial fishing is managed by DPI. Fisheries and changes to local fishing regulations are beyond the scope of this CMP.

Lake Illawarra Coastal Management Program

- Sets the long-term strategy for the coordinated management of Lake Illawarra
- 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
- 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

- 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

Table 3-2 Threat Mitigation Potential

Influence	Score
Direct positive	2
Indirect positive	1
No influence	0
Indirect negative	-1
Direct negative	-2

Table 3-4 Cost Benefit Analysis Criteria and Scoring System

Outcome	Capital Costs	Ongoing Costs per	Effectiveness	Community Acceptability	Reversible / Adaptable Future	Legal / Approval Risk	Technical Viability
STOP	Very expensive (>\$300,000)	Very expensive (>\$150,000 p.a.)	Option is unlikely to be effective / substantially reduces targeted threats	Unlikely to be acceptable to community and politically unpalatable; Extensive community education, endorsement by Minister(s) and Council required	Option is irreversible once implemented; Option limits alternatives options in the future	Will require an EIS and/or Govt program to implement; There is a residual risk that approval will not be obtainable for the proposed works / strategy	Is unlikely to be technically viable without substantial engineering (or other) design investigation and capabilities for implementation
SLOW	Moderately expensive (\$100,000 - \$300,000)	Moderately expensive (\$25,000 - \$150,000 p.a.)	Option will not necessarily reduce targeted threat(s) but will provide important knowledge / data about the threat OR Option will bring a minor reduction in the targeted threat(s)	Would be palatable to some, not others (~50/50 response); Briefing to Councilors, GM and community education required	Option is reversible or adaptable, but at considerable cost / effort	Will require Govt approvals to be implemented, or assistance through existing Govt program;	Is likely to be technically viable at the site, but would require further investigations to clarify
GO	Limited cost (<\$100,000)	Limited cost (<\$25,000 p.a.)	Option will be very effective in eliminating / reducing / remediating its target threat(s)	Is very politically palatable, acceptable to community; Minimal education required	Option can be easily adapted for future circumstances or should impacts not occur, option would not negatively impact future generations	No or minimal government approvals required to implement	Is technically viable at the site / location

Table 3-3 Example Threat Mitigation Score Process

Action ID	Action Descriptor	Entrance channel changes	Water pollution	Catchment development	Loss of estuarine vegetation	Wetland degradation	Litter, plastics and marine debris	Contaminated sediments	Inappropriate / degraded / insufficient infrastructure	Loss of tangible and intangible cultural heritage	Foreshore development encroaching public land	Loss of riparian habitat	Foreshore and bank erosion	Future climate change	Park management practices impacting adjacent natural areas	Commercial fishing	Introduced species	Cumulative Threat Mitigation Score (TMS)
	Risk Rating	Very High	Very High	Very High	High	High	High	High	High	High	Medium	Medium	Medium	Medium	Medium	Medium	Low	Weighted according to risk rating of threat
Strategy 4: Protect and Rehabilitate Estuarine and Riparian Vegetation (EV)		2=direct positive influence, 1= indirect positive influence, 0 = no influence, -1 = indirect negative influence, -2 indirect negative influence																
EM	Rehabilitate vegetation along lake foreshores and creek banks.	1	1	0	2	2	1	1	0	1	1	2	2	1	1	0	1	44

Lake Illawarra Estuary Management Committee

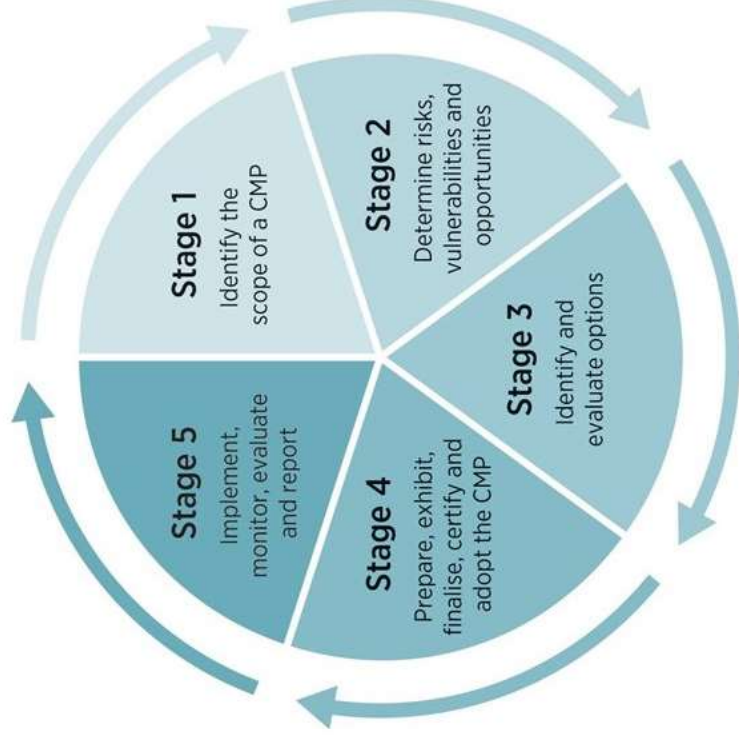
- The Lake Illawarra Estuary Management Committee (LIEMC) was a stakeholder committee of representatives from key government agencies, the community and scientific advisors.
- This Committee was active from 2016 to 2021 throughout stages 1 – 4 of the 5 stage Coastal Management Framework
- The LIEMC provided 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

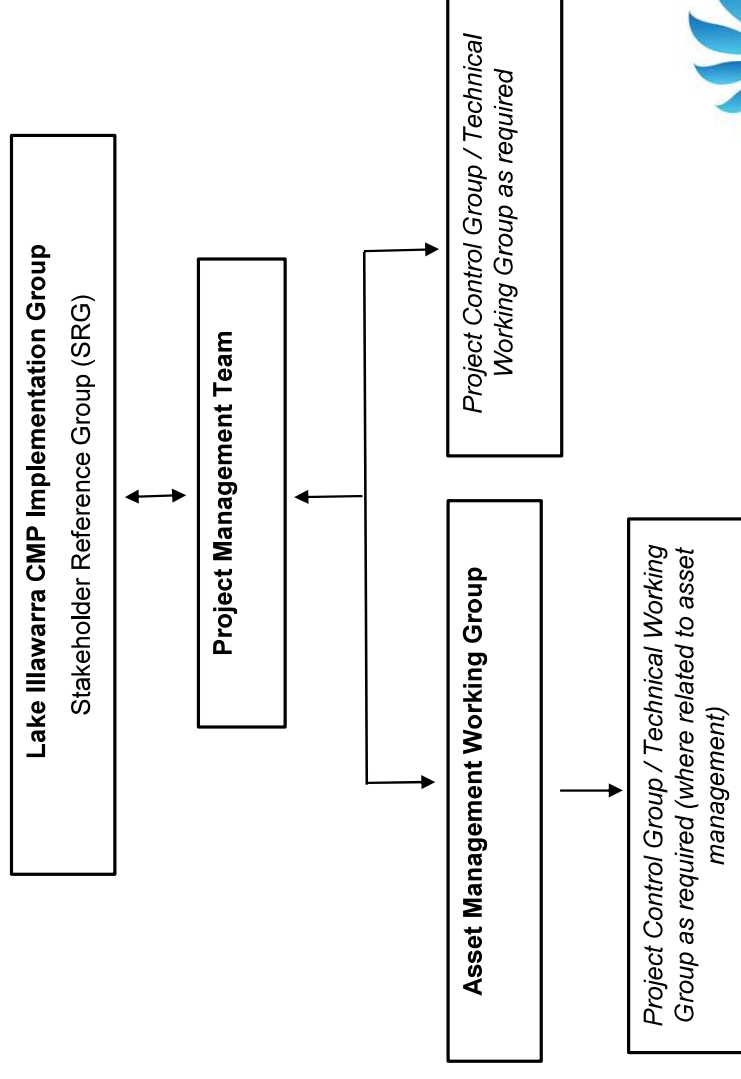
Moving from Stage 4 to Stage 5

- 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



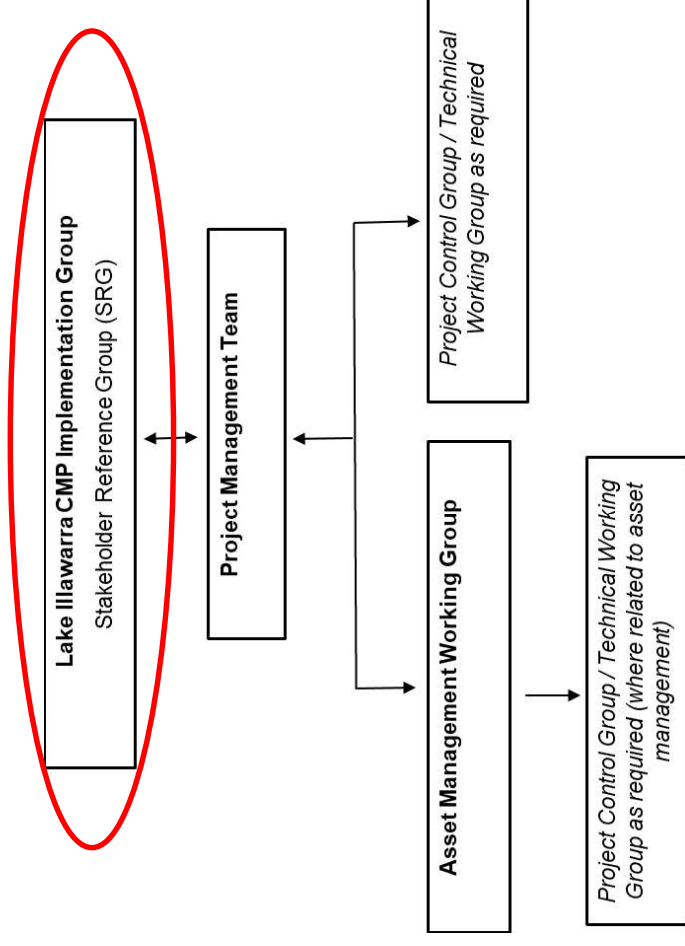
Designing a Governance Framework for the Lake Illawarra CMP

- Design was guided by CMP action PM2 and the MOU
- 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 / Charters



CMP Implementation Group Purpose

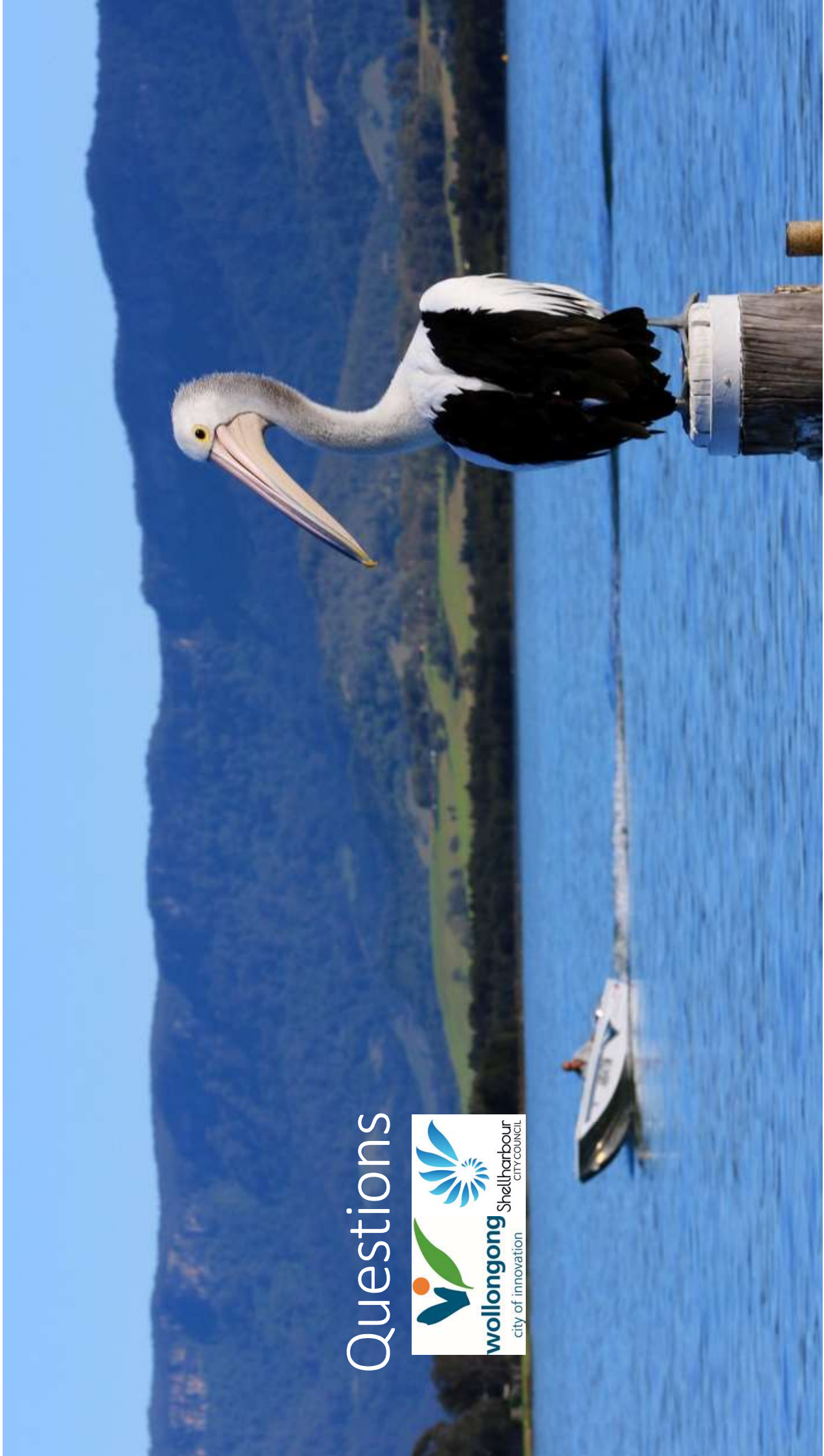
- The purpose of the Lake Illawarra CMP Implementation Group is to oversee and where needed, provide advice on the implementation of actions within the Lake Illawarra CMP
- A platform for relationship building between all stakeholders, with the shared aspiration to ensure that Lake Illawarra's ecological, 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 representing
- Reflect the concerns of relevant stakeholders and the broader community regarding implementation of actions within the CMP
- 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.

Questions

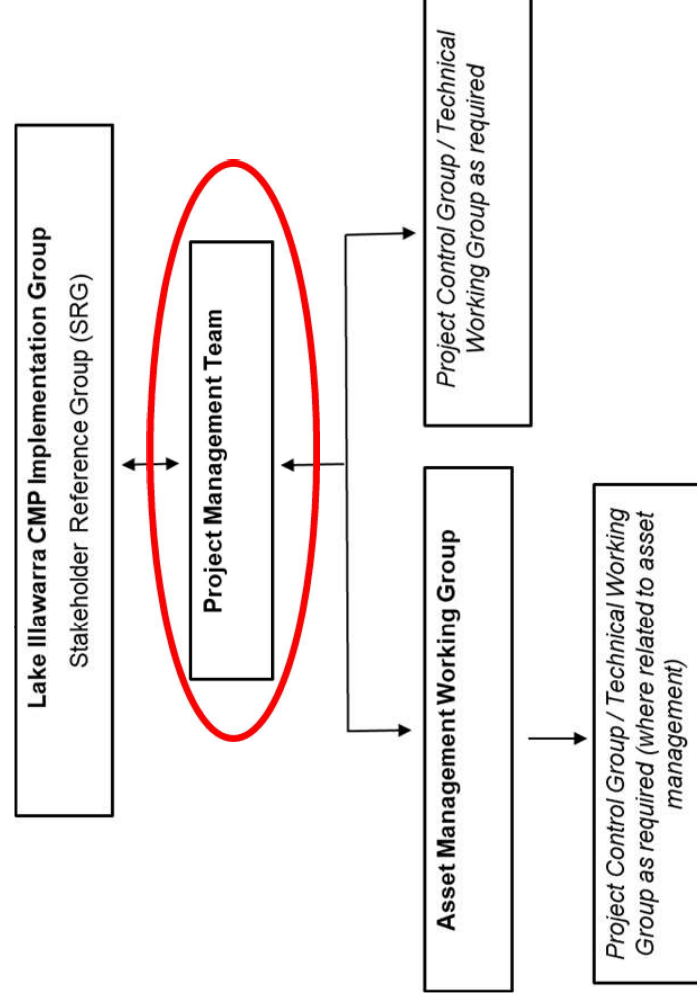


Project Management Team CMP Action Update



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 CMP).
- 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

Strategy 1: Improve Water Quality (WQ)	
WQ1	Implement a Risk Based Stormwater Management Framework for the Lake Illawarra catchment
WQ2	Upgrade existing stormwater quality management measures, or install new devices, which may include water sensitive urban design or other design that will improve water quality as well as enhance habitat and natural values
WQ3	Review and profile maintenance and cleaning regime for existing stormwater quality devices
WQ4	Design and implement targeted catchment input monitoring as required for developments resulting in a large-scale change or intensification of land use
WQ5	Reduce sediment load to the Lake by improving compliance with erosion & sediment controls for development sites
WQ6	Reduce the impact of sewer overflows
WQ7	Develop and implement a water quality monitoring program for estuary health, recreational use and physico-chemical and bacteriological indicators in the Lake and its catchment
WQ8	Improve litter management
WQ9	Investigate and manage potential pollution sources including contaminated sites that contribute to poor water quality in the Lake
Strategy 2: Improve Planning and Management Arrangements for the Lake (PM)	
PM1	Commence integration of key objectives and strategies from the CMP into relevant planning and policy documents of both Councils
PM2	Provide ongoing coordinated management of the Lake, which will require ongoing support for existing staff resources
PM3	Develop and implement a community engagement and participation strategy that enhances the community's knowledge of, skills in, and commitment to, protecting Lake Illawarra
PM4	Endorse and implement a Lake Illawarra Management Working Group that provides coordination services for agencies that manage assets around the Lake Illawarra basin
Strategy 3: Manage the Entrance Channel (EC)	
EC1	Investigate and finalise options to manage erosion and accretion changes in the entrance channel
EC2	Undertake small scale works (e.g. beach scraping, re-shaping etc) to maintain swimming areas
EC3	Undertake emergency works or small scale no-regrets actions as required to mitigate known risks to property and public safety
EC4	Monitor changes to the entrance channel
EC5	Monitor and maintain existing entrance channel infrastructure, with any works to be informed by EC1-EC3 and EC4
Strategy 4: Protect and Rehabilitate Estuarine and Riparian Vegetation (EV)	
EV1	Rehabilitate vegetation and manage public access along shorelines and banks of the Lake, its tributaries, islands and broader low-lying areas
EV2	Undertake targeted action to control damage to shoreline vegetation, including seagrasses
EV3	Prepare and deliver an information program for the Lake Catchment
EV4	Prepare and implement an estuarine macrophyte mapping and monitoring program
EV5	Develop and implement a program to enhance opportunities for estuarine vegetation migration
Strategy 5: Maintain and Improve Recreational Amenity (RA)	
RA1	Manage foreshore and walkway recreational infrastructure
RA2	Construct new sections of shared pathway to complete the pathway linkage around the Lake
RA3	Investigate opportunities of public access along the foreshore and amend the acquisition layers of the relevant Council Local Government's Recreation Management Plan
RA4	Build on the Tourism opportunities for Lake Illawarra
RA5	Conduct small scale dredging to improve public recreational outcomes and to improve the functionality of stormwater outlet infrastructure
RA6	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 the Lake where sedimentation and/or the changed nature of the entrance channel has negatively impacted on recreational use
Strategy 6: Protect and Promote Cultural Heritage (CH)	
CH1	Protect and promote cultural heritage is and around the Lake and its catchment
Strategy 7: Manage Foreshore and Bank Erosion (FB)	
FB1	Undertake a bank condition assessment and determine and implement erosion control measures
FB2	Implement Environmentally Friendly Seawall Guidelines or similar for new and upgraded foreshore protection works
FB3	Undertake a bathymetric survey of the entire Lake and tributaries up to the tidal limit
Strategy 8: Prepare for Inundation Risks (IR)	
IR1	Update Asset Management Plans for all publicly owned and managed assets to clearly identify asset at risk from inundation over future lifetimes, including tidal inundation
IR2	Prepare a whole of Lake Foreshore Adaptation Plan for public (community and environmental) lands
IR3	Incorporate tidal inundation mapping into strategic land use planning documents
IR4	Undertake water level and condition monitoring for all lake inundation events
IR5	Investigate novel solutions to manage inundation risks to assets such as stormwater, sewer, and water, cycleways, roads and bridges, etc.
Strategy 9: Protect and Manage Key Fauna (MF)	
MF1	Develop and implement a fauna management program including shorebirds, fish and other fauna

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



Planning,
Industry &
Environment



Department of
Primary Industries



Local Land
Services



wollongong Shellharbour
CITY COUNCIL
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Water Quality and Estuary Health Monitoring Program

- Action **WQ7** in the CMP carried out in partnership with WCC, SCC and DPE
- Grant funding of approx. **\$230,000** over three years spanning from 2021 -2024 obtained through the NSW Government's Coast and Estuary Grant Program
- Water Quality Monitoring Project includes the following aspects –
 - 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



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

PHOTO POINT 18



October 2019



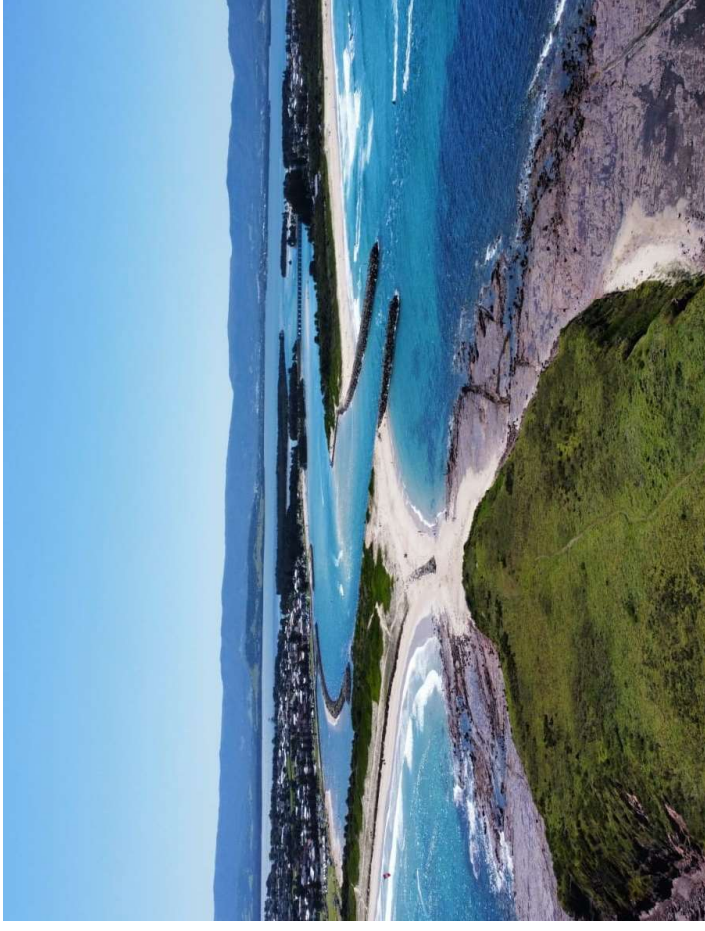
July 2020



June 2021

Entrance Options Study (I)

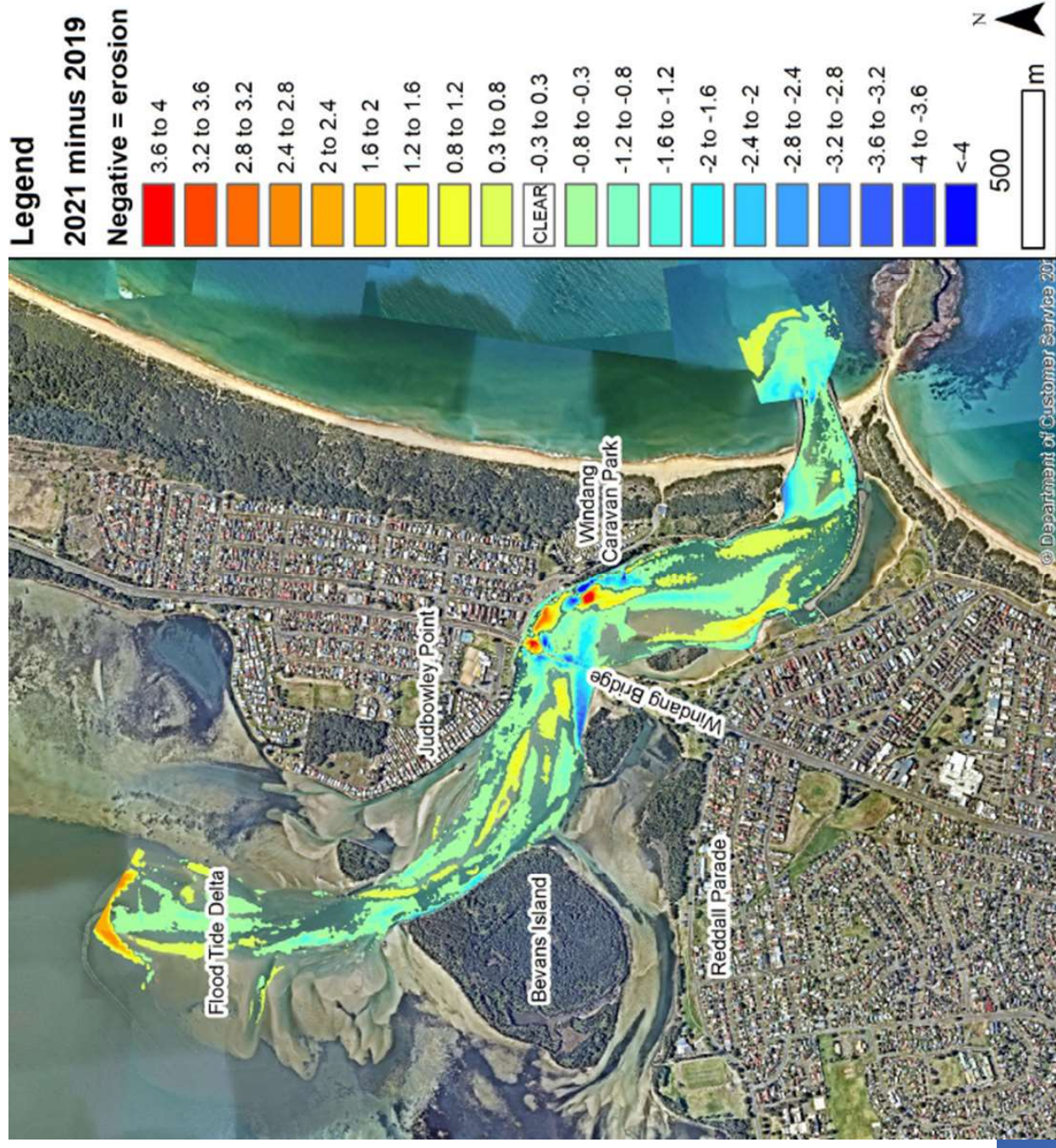
- Action EC1 in the CMP carried out in partnership with WCC, SCC, Transport for NSW and Department of Planning and Environment (DPE)
- EC1 is to *investigate and finalise options to manage erosion and accretion changes in the entrance channel.*
- These issues have been exacerbated since the permanent 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 (II)

- 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:

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

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



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AUSTRALIA



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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 Government
- Benefits of the Promenade upgrade include:
 - Safe and accessible footpath connectivity.
 - Enhanced foreshore recreational open space including ramp access to water's edge and seating.
 - Reclined seating along the foreshore offering unobstructed views along the water's edge.
 - Improvements to protect the foreshore from erosion.



Timeline



Stage 1

Concept Designs prepared by landscape architect



Stage 2

Construction Package Out to Tender

The preferred tenderer will be considered by Council later this year.



Stage 3

Construction due to start - estimated October 2022



Stage 4

Construction complete

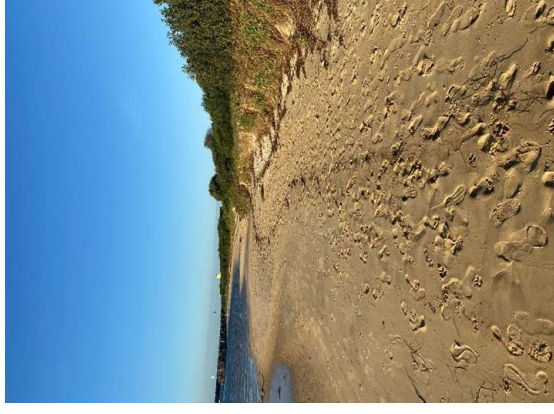


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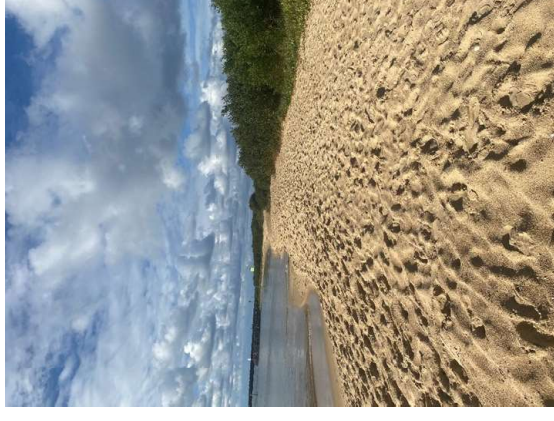
Reddall Reserve Sand Scraping

- 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

Before

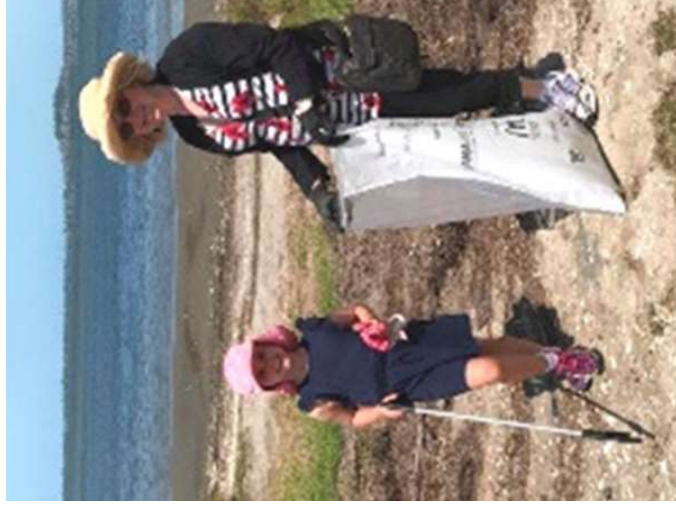


After



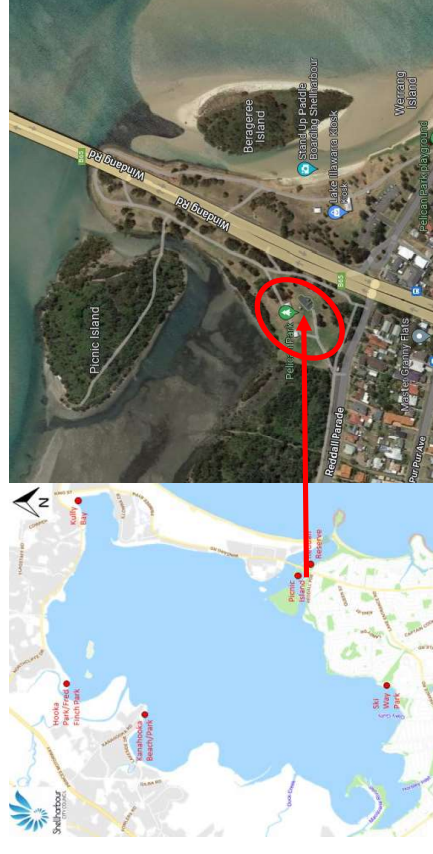
Luv the Lake Litter Prevention Grant

- 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

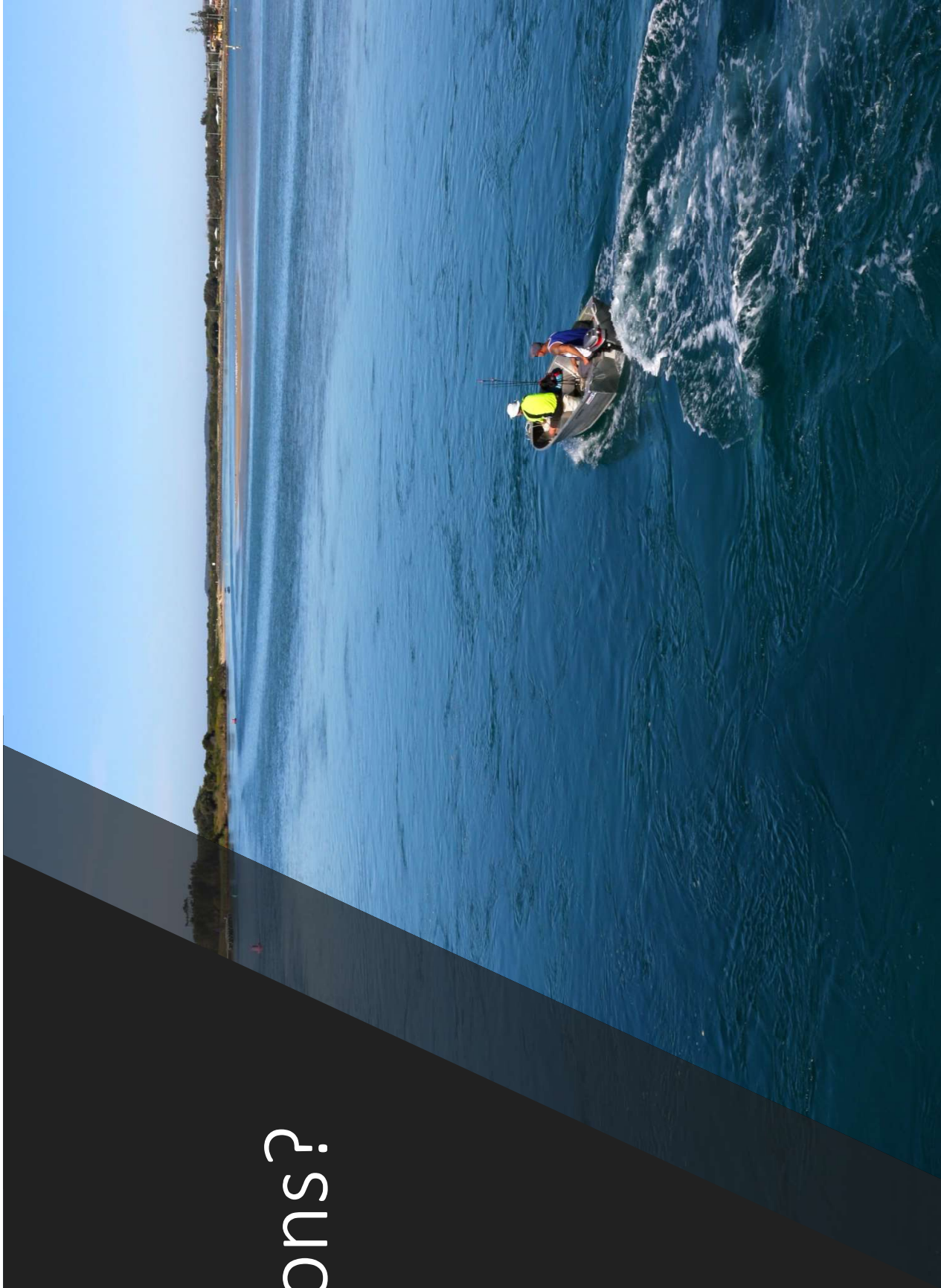


Grant Funded Projects Commencing in Year 2 2022/23

- 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



Questions?



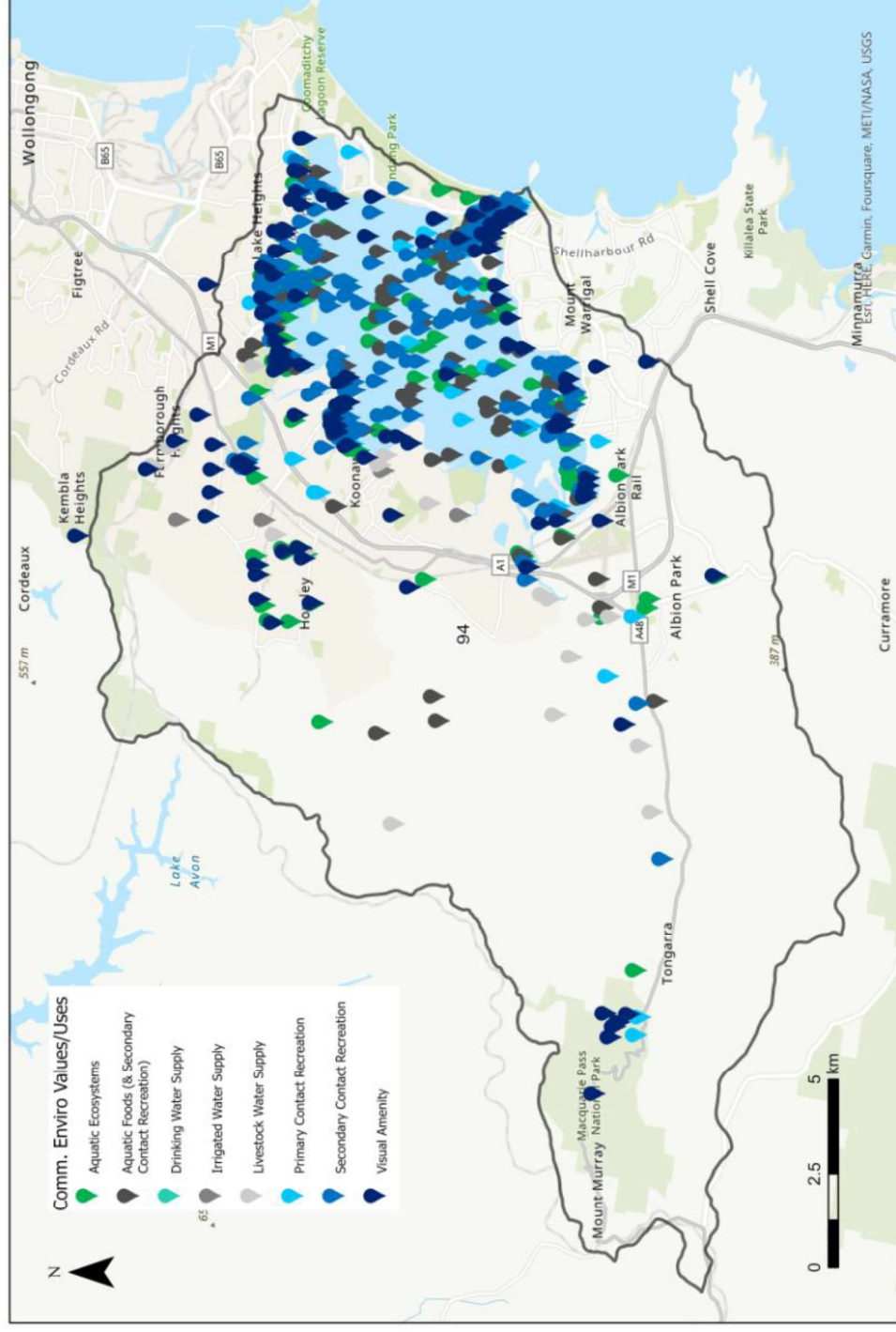


Protecting community values and uses of Lake Illawarra using a Risk- based Framework

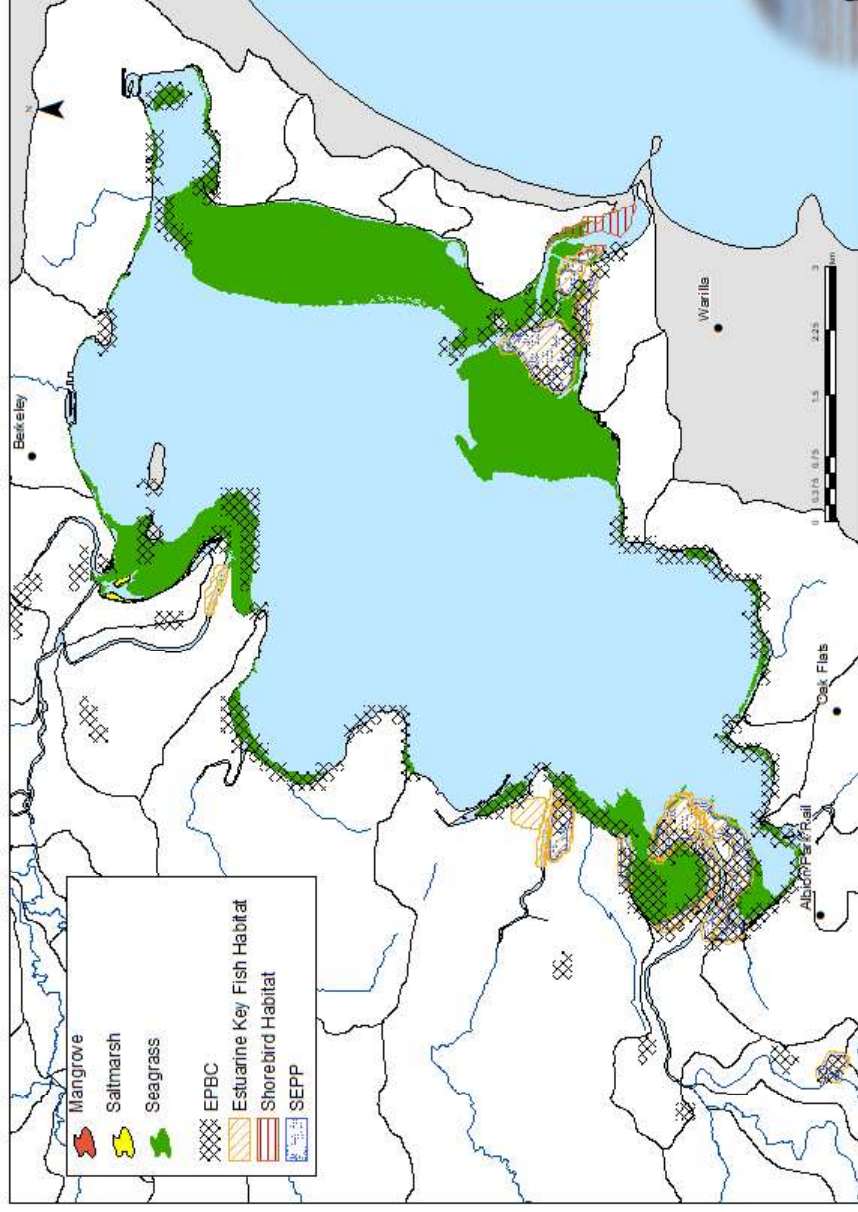
Jocelyn Dela-Cruz
Principal Scientist

27 July 2022

Community environmental values and uses of Lake Illawarra



Ecological values of Lake Illawarra



Economic values of Lake Illawarra (annual estimates for 2015)



Lake Health and Water Quality

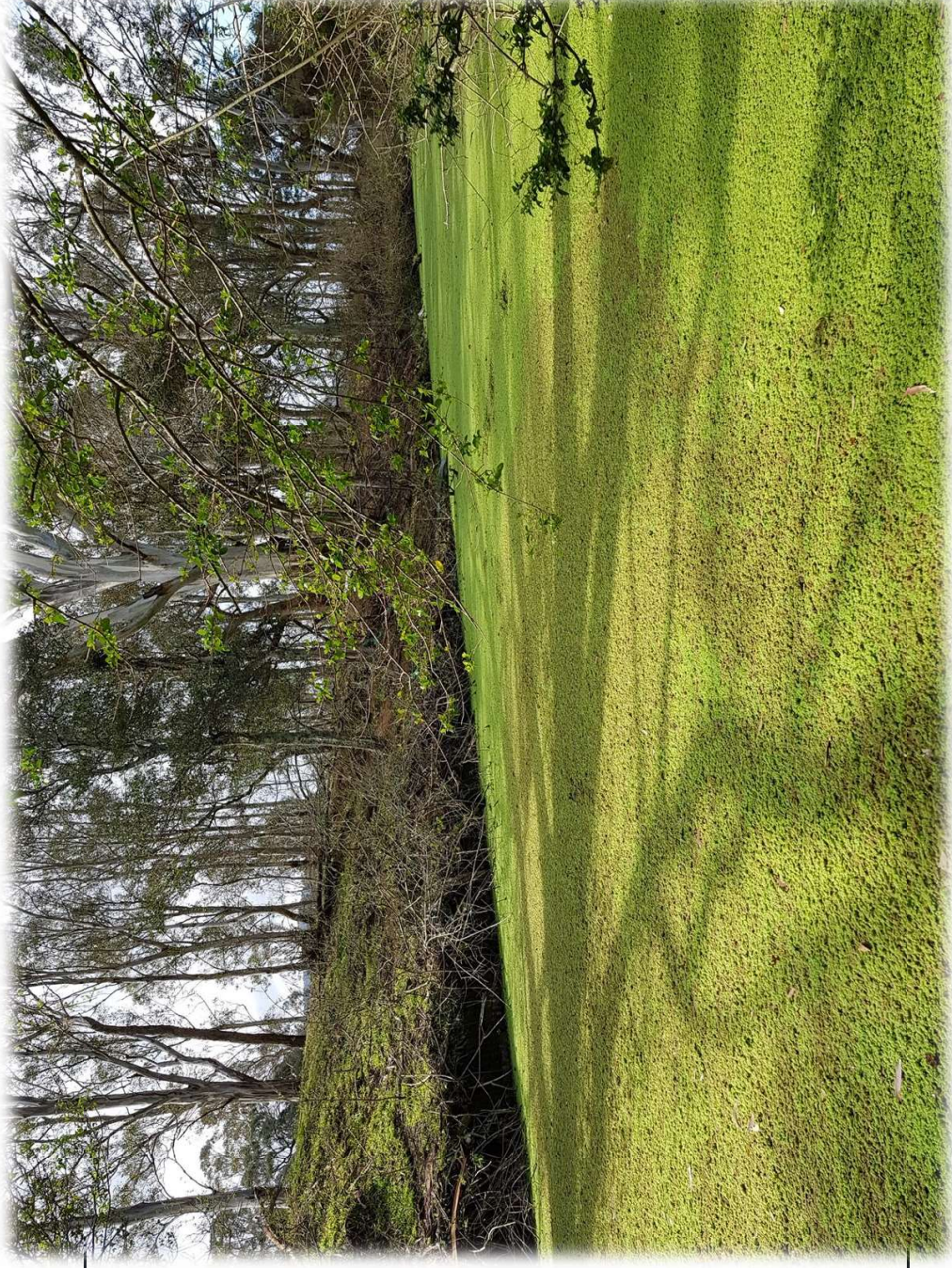


Griffiths Bay





Water based activities

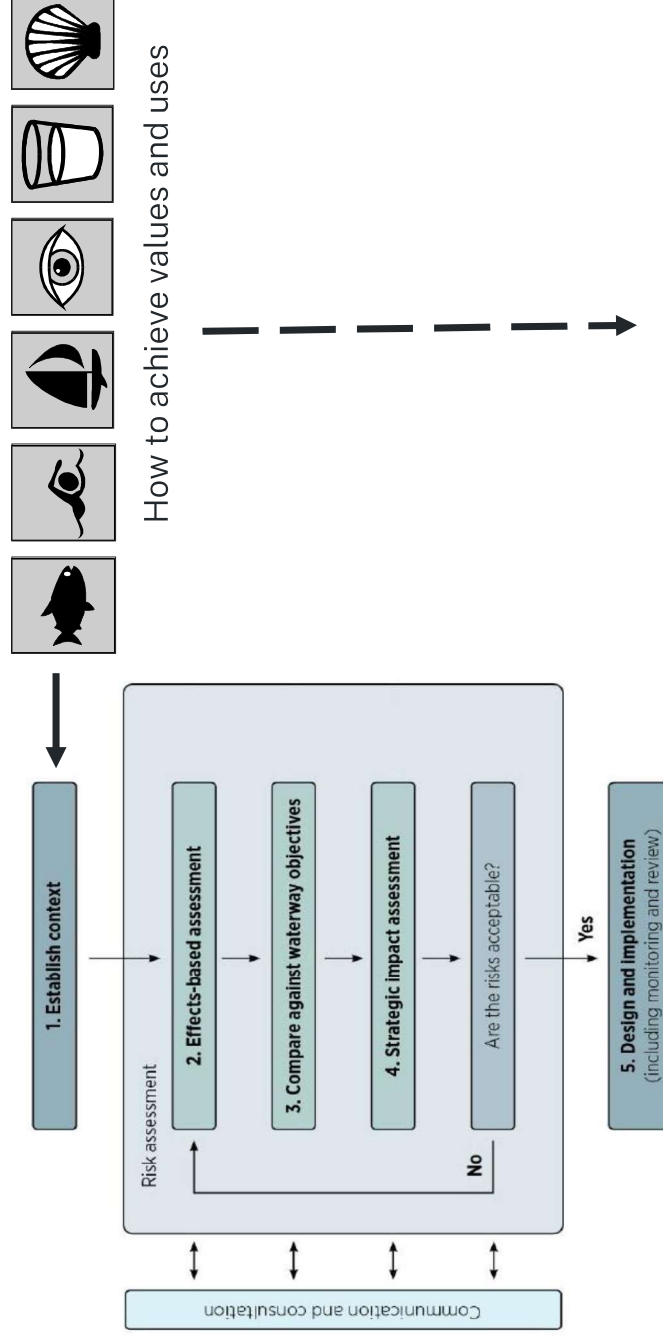
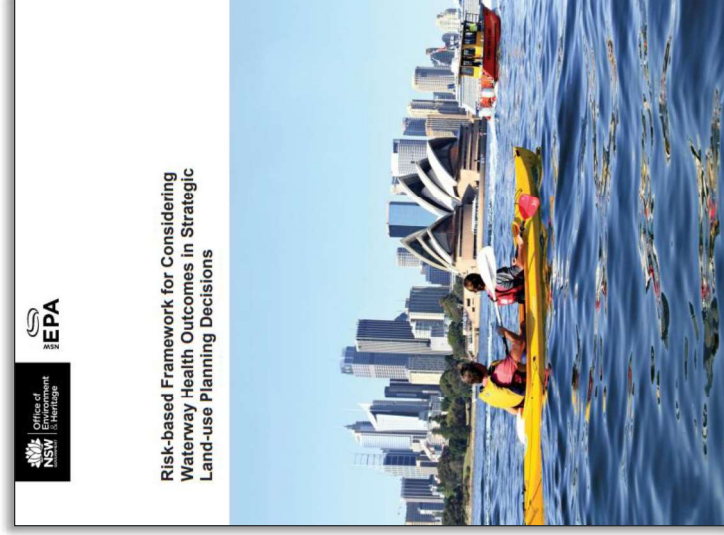
Freshwater tributaries



NSW Water Quality Objectives (WQOs)

COMMUNITY ENVIRONMENTAL VALUE OR USE	INDICATOR	NUMERICAL CRITERIA	Goals for how communities use and value their waterways
Primary contact recreation e.g. swimming 	Enterococci (cfu/100ml) is measured to gauge whether a waterway is suitable for swimming	Numerical criteria represents risk of illness from contact with the water e.g. < 40 cfu/100ml indicates very good water quality for swimming	Goals managing cumulative impacts
Protection of Aquatic Ecosystems 	Chlorophyll <i>a</i> Total Phosphorus Free Reactive Phosphorus Total Nitrogen Ammonium Oxidised Nitrogen Dissolved Oxygen pH Temperature Turbidity Salinity Biological Indicators (macroinvertebrates, fish...) Chemical contaminants or toxicants	For example: <ul style="list-style-type: none"> 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 	

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 ANZECC 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:

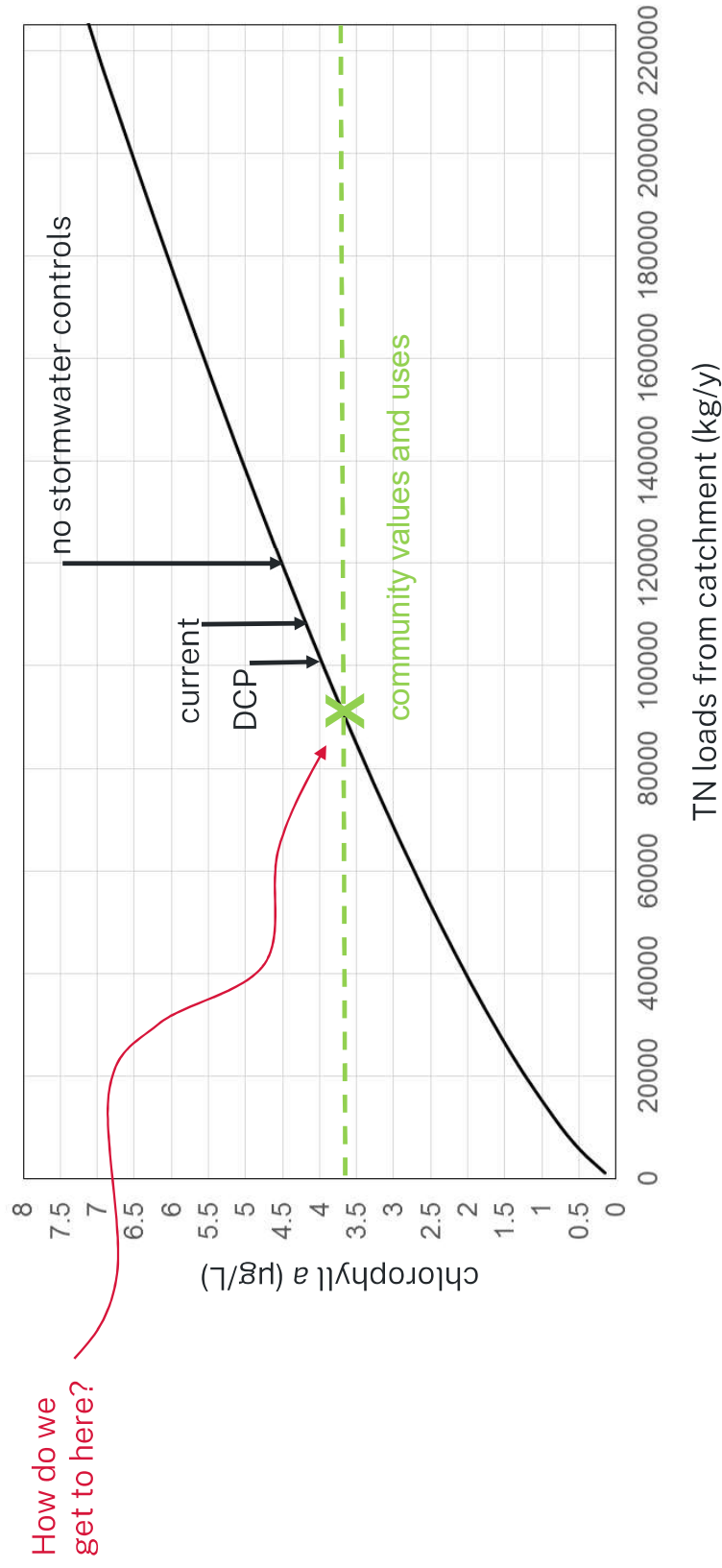
- apply a risk-based decision-making framework for all coastal lakes and estuaries. In the medium term, priority will be given to sensitive estuaries, which are susceptible to the impacts of land use developments (see Table 2).

Urban development in the catchment

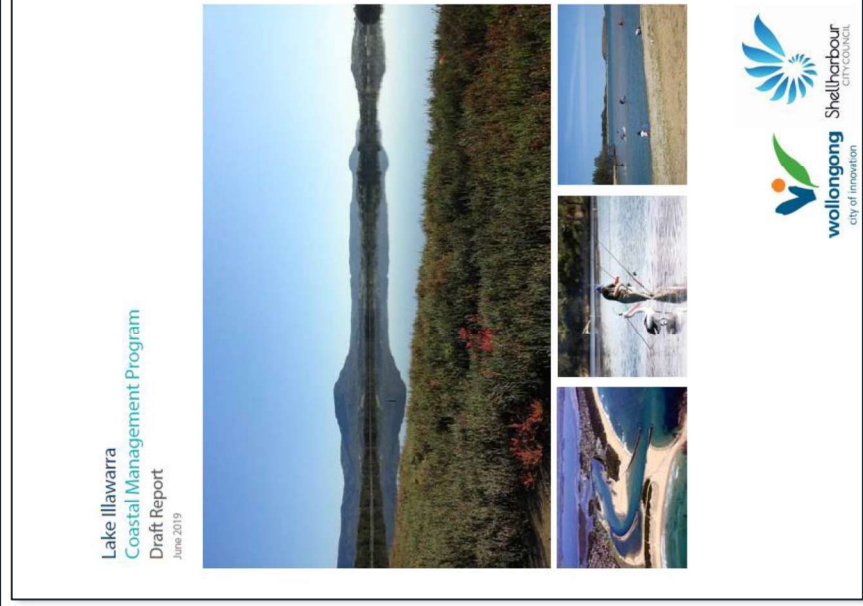


Are current development controls for stormwater enough to protect community values and uses?

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 Framework)



1 MANAGEMENT OBJECTIVE

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

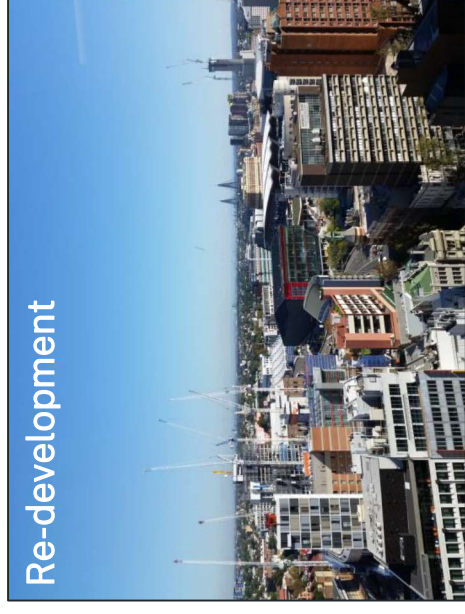


✓ NSW Government investment for Lake Illawarra \$200,000 (OPEX), plus in-kind staffing

Post development load reduction targets

Council DCP:

- ✓ 85% TSS
- ✓ 65% TP
- ✓ 45% TN

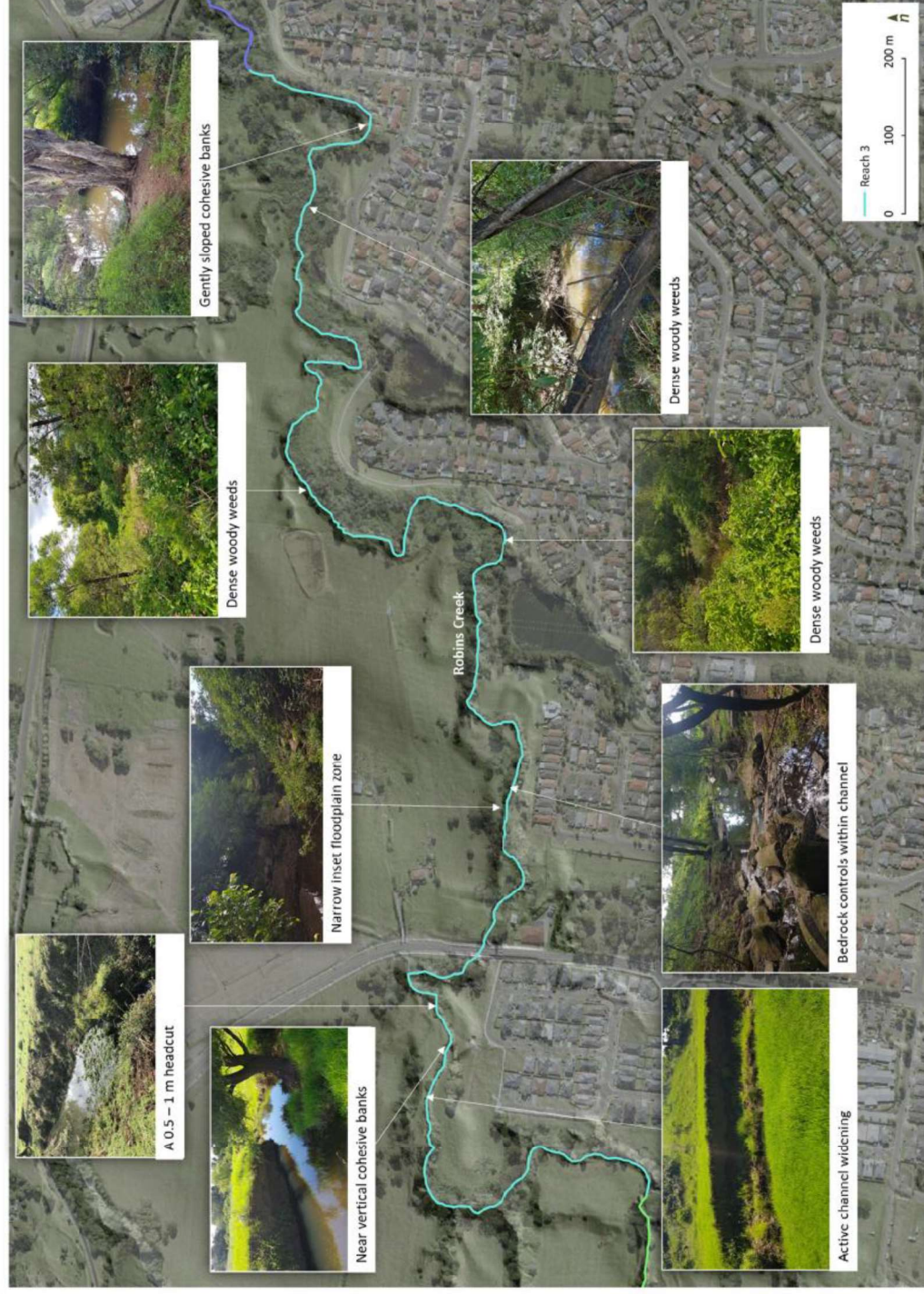


'Risk-based Framework targets':

- ✓ 82% TSS
- ✓ 78% TP
- ✓ 67% TN



Study area



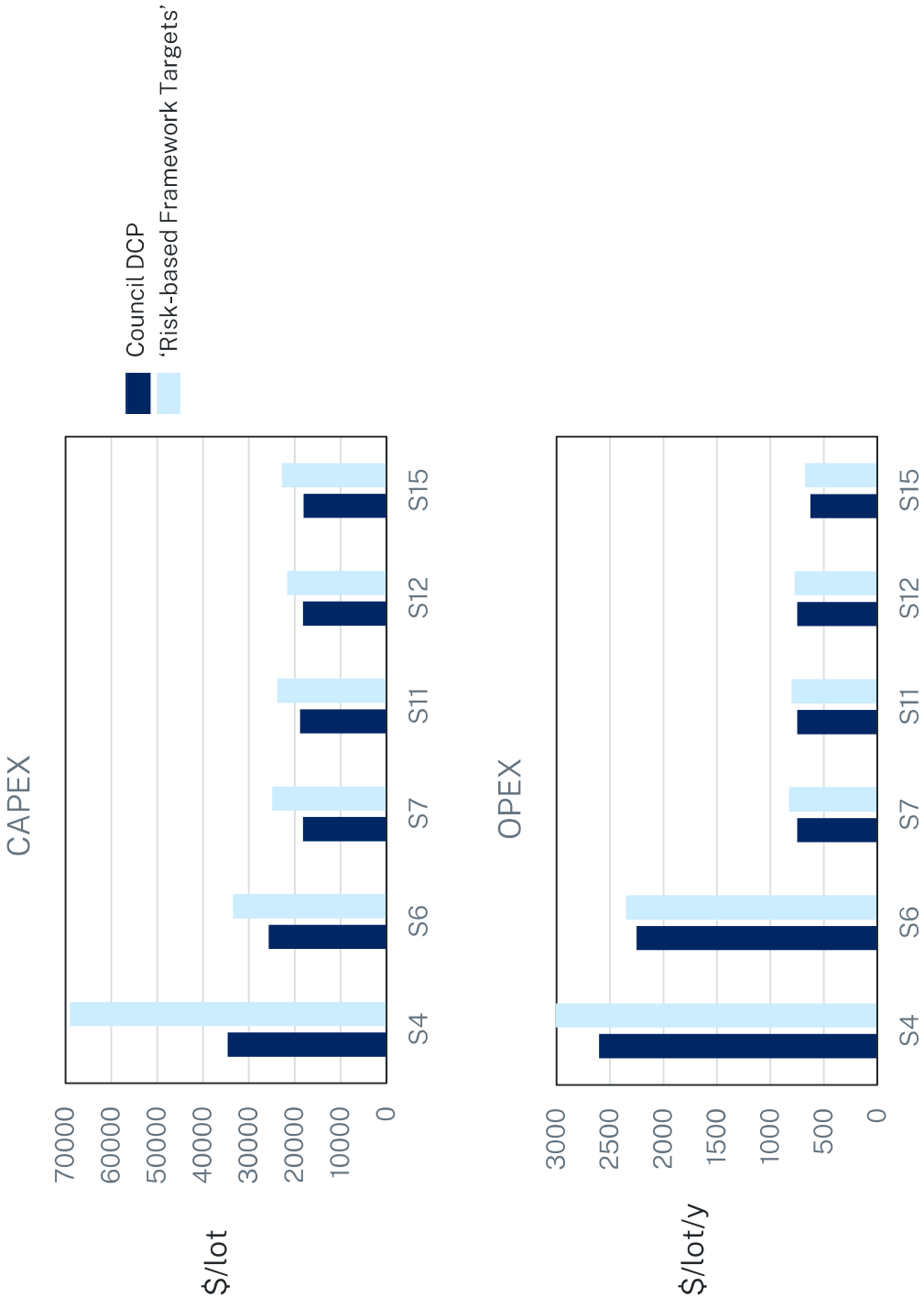
Water Sensitive Urban Design



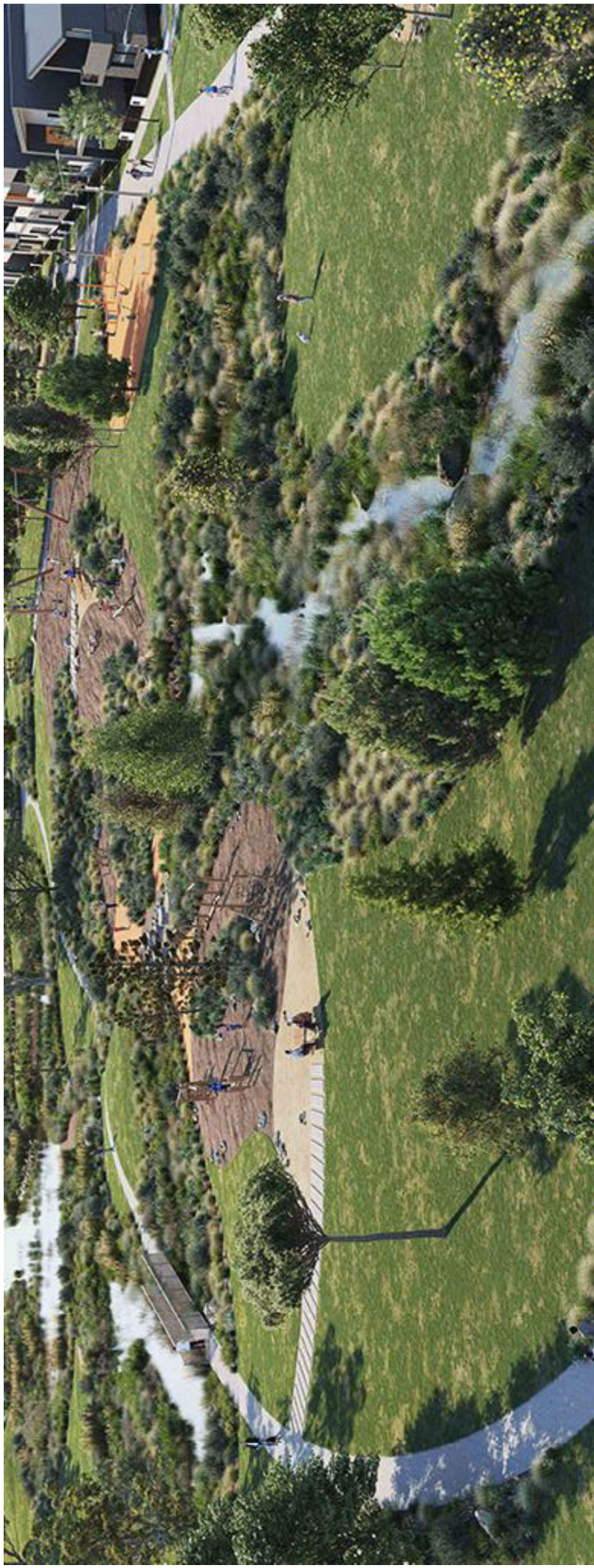
Stormwater treatment trains

Stormwater management measure	Scenario No.														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
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												✓	✓	✓	

Costs



Regional systems relatively cost effective



Decentralised systems provide other co-benefits



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Rain gardens on their way to Wollongong

Wednesday 5 February 2020

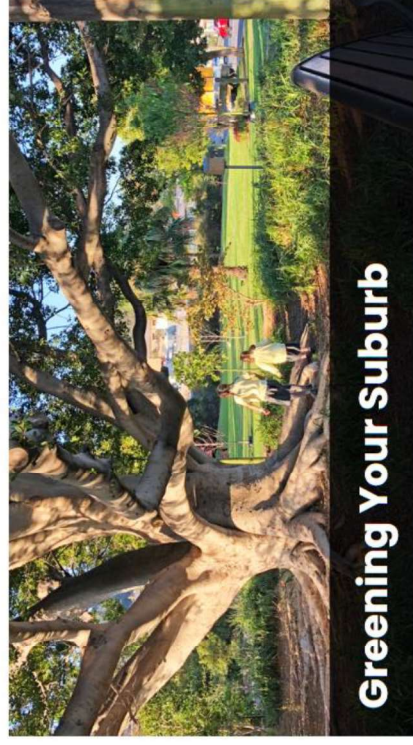




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Council is bringing more plants and trees to our streets and parks, and caring for the ones we already have, through our Urban Greening Program.

We're also calling on the whole community to get involved in Community Greening.

Need for stormwater quantity (flow) targets



- ✓ Mean annual runoff volume
- ✓ 90th percentile
- ✓ 50th percentile
- ✓ 10th percentile

Next steps



Finish evidence base /studies



Consultation

→ EMC feedback?



Revised DCP and implementation



Capacity building (Marine Estate Management Strategy