



# **WATER MANAGEMENT ADVISORY COMMITTEE**

**03 April 2024**



# COMMUNITY STRATEGIC PLAN 2018-2028

**ONE – CENTRAL COAST IS THE COMMUNITY STRATEGIC PLAN (CSP) FOR THE CENTRAL COAST LOCAL GOVERNMENT AREA**

**ONE – CENTRAL COAST DEFINES THE COMMUNITY'S VISION AND IS OUR ROADMAP FOR THE FUTURE**

**ONE – CENTRAL COAST BRINGS TOGETHER EXTENSIVE COMMUNITY FEEDBACK TO SET KEY DIRECTIONS AND PRIORITIES**

One - Central Coast will shape and inform Council's business activities, future plans, services and expenditure. Where actions are the responsibility of other organisations, sectors and groups to deliver, Council will work with key partners to advocate on behalf of our community.

Ultimately, every one of us who live on the Central Coast has an opportunity and responsibility to create a sustainable future from which we can all benefit. Working together we can make a difference.

## RESPONSIBLE

**WE'RE A RESPONSIBLE COUNCIL AND COMMUNITY, COMMITTED TO BUILDING STRONG RELATIONSHIPS AND DELIVERING A GREAT CUSTOMER EXPERIENCE IN ALL OUR INTERACTIONS.**

We value transparent and meaningful communication and use community feedback to drive strategic decision making and expenditure, particularly around the delivery of essential infrastructure projects that increase the safety, liveability and sustainability of our region. We're taking a strategic approach to ensure our planning and development processes are sustainable and accessible and are designed to preserve the unique character of the coast.

 **Good governance and great partnerships**

**G2** Engage and communicate openly and honestly with the community to build a relationship based on trust, transparency, respect and use community participation and feedback to inform decision making

There are 5 themes, 12 focus areas and 48 objectives

### COMMUNITY STRATEGIC PLAN 2018-2028 FRAMEWORK

All council reports contained within the Business Paper are now aligned to the Community Strategic Plan. Each report will contain a cross reference to a Theme, Focus Area and Objective within the framework of the Plan.

The infographic details the following structure:

- THEME: BELONGING**
  - Focus Area: OUR COMMUNITY (Objectives: G1, G2, G3, G4)
  - Focus Area: COMMUNITY GOVERNANCE AND LOCAL GOVERNANCE (Objectives: G5, G6)
- THEME: SMART**
  - Focus Area: A GROWING AND COMPETITIVE REGION (Objectives: C1, C2, C3, C4)
  - Focus Area: A PLACE OF OPPORTUNITY FOR PEOPLE (Objectives: D1, D2, D3, D4)
- THEME: GREEN**
  - Focus Area: ENVIRONMENTAL WELL-BEING FOR THE FUTURE (Objectives: E1, E2, E3)
  - Focus Area: INCREASED RAIN WATER RESILIENCE (Objectives: F1, F2)
- THEME: RESPONSIBLE**
  - Focus Area: GOOD GOVERNANCE AND GREAT PARTNERSHIPS (Objectives: G1, G2, G3, G4)
  - Focus Area: BELONGING THROUGH INFRASTRUCTURE (Objectives: H1, H2, H3, H4)
  - Focus Area: SAFETY AND WELLBEING (Objectives: I1, I2, I3, I4)
- THEME: LIVEABLE**
  - Focus Area: RELIABLE PUBLIC TRANSPORT AND CONNECTIONS (Objectives: J1, J2, J3, J4)
  - Focus Area: RUST AND RUSTLE (Objectives: K1, K2, K3, K4)
  - Focus Area: HEALTHY LIFESTYLES (Objectives: L1, L2, L3, L4)



# Meeting Notice

**The Water Management Advisory Committee  
of Central Coast Council  
will be held in the Nexus Building,  
3 Amy Street, Wyong,  
on Wednesday 3 April 2024 at 1:30pm,  
for the transaction of the business listed below:**

## **1 Procedural Items**

- 1.1 Introduction: Welcome, Acknowledgement of Country, Apologies, Disclosure of Interest..... 4
- 1.2 Previous business: Confirmation of minutes, review action log ..... 5

## **2 Reports**

- 2.1 Water Supply System Status Report.....14
- 2.2 Environmental Protection Licence (EPL) Non-compliance Summary.....31
- 2.3 Update on Water and Sewer Masterplan .....36
- 2.4 Water Resilience Project Status Update.....42

Jamie Loader  
**Chairperson**

## **1.1 INTRODUCTION: WELCOME, ACKNOWLEDGEMENT OF COUNTRY, APOLOGIES, DISCLOSURE OF INTEREST**

Chairperson

### **Welcome, Acknowledgement of Country, Receipt of Apologies**

We acknowledge the Traditional Custodians of the land on which we live, work and play.

We pay our respects to Darkinjung country, and Elders past and present.

We recognise the continued connection to these lands and waterways and extend this acknowledgement to the homelands and stories of those who also call this place home.

We recognise our future leaders and the shared responsibility to care for and protect our place and people.

## **1.2 PREVIOUS BUSINESS: CONFIRMATION OF MINUTES, REVIEW ACTION LOG**

Chairperson

Note: Meeting scheduled for 30 November 2023 was not held, as quorum was not reached.

28 September 2023 meeting minutes and action log are included at attachment 1, for confirmation and review.

### **Attachments**

- |          |   |           |
|----------|---|-----------|
| <b>1</b> | MINUTES - Water Management Advisory Committee - 28 September 2023 | D15877688 |
|----------|---|-----------|



Central Coast Council

## Water Management Advisory Committee

Location: Nexus Building, Wyong  
and Microsoft Teams

28 September 2023

# MINUTES

---

### Attendance

#### Members

John Asquith  
Ken Brookes  
Daryl Mann  
Pam McCann  
Mick Redrup

#### Status

Absent  
Present – online  
Present – online  
Present – online  
Apology

#### Staff

Jamie Loader, Director Water and Sewer  
Danielle Hargreaves, Unit Manager Headworks and Treatment  
Luke Drury, Section Manager Assets and Planning  
Satpal Singh, Lead Engineer Water Resilience  
Mohan Seneviratne, Strategy Lead Water Conservation  
Scott Gordon, Business Manager, Business Performance  
Rachel Callachor, Meeting Support Officer

#### Status

Present  
Present  
Present  
Present  
Present  
Present  
Present

### PROCEDURAL ITEMS

#### 1.1 Introduction: Welcome, Acknowledgement of Country, Apologies, Disclosure of Interest

---

The Chairperson, declared the meeting open at 2.05pm

The Chair read an Acknowledgement of Country statement.

Apologies received were noted.

The Chair called for any disclosures of interest. No disclosures were received

**Minutes of the Water Management Advisory Committee 28 September 2023 contd****1.2 Previous business: Confirmation of minutes, review action log**

The group confirmed the minutes from the previous meeting as noted below, which were distributed to members via email and uploaded to Council's website:

[Water Management Committee meeting held 22 February 2023.](#)

Confirmed: Unanimous

The action log was reviewed with items updated to reflect their current status.

**REPORTS****2.1 Water Supply System Status Report**

Presentation by Satpal Singh, Lead Engineer Water Resilience, covering:

Dam Storage levels as at 24/9/2023

Noting: Upper Mooney Dam, lowest level since 2006, very low level of 37% capacity.

- Rainfall statistics
- River extractions – currently no pumping from Wyong River, and minimal water from Ourimbah Creek into Mardi Dam
- Status of Important Assets
- Hunter Water storage and transfers
- Water Demands (weekly and monthly)
- Climate Driver Update (El-Nino)
- Rainfall outlook (March to May 2023), Max and Min Temperature Outlook (March to May 2023)
- Ourimbah Creek streamflow – Feb to April 2023
- DPI Combined Drought Indicator - noted that part of the Central Coast Region was listed as in drought as defined by the Department of Primary Industry Drought Indicator Mapping.

Questions from the Committee regarding Mardi Water Treatment Plant upgrade and ability to treat low dissolved oxygen water once completed.

Response provided – the future Dissolved Air Flotation (DAF) process will provide air saturation to the water and assist subsequent manganese removal at the filters via the coated media process.

In relation to the increase in weekly demands of water, will there be any campaigns regarding water conservation heading into summer?

Response provided, yes tying into National Water Week, there will be education pieces and education officers working with school communities. Focus is education to develop a water smart community. "Live to 150 campaign" – which also includes radio advertisements, along with libraries and customer service messaging, leading into water conservation program.

**Minutes of the Water Management Advisory Committee 28 September 2023 contd**

---

Noted that the current water conservation messaging will ramp up into summer to include messaging about the drought situation and El-nino climate driver.

Question regarding Mangrove Dam – de-stratification unit  
Response and further information provided regarding recent refurbishment work. Additional water quality sampling is being undertaken to demonstrate effectiveness of the works.

**Recommendation**

***That the Committee notes the Water Supply System Status report for September 2023.***

**2.2 Water Resilience Project Status Update**

---

Presentation by Luke Drury, Section Manager Assets and Planning, covering the 3 Pillars of the Central Coast Water Security Plan (CCWSP).

**Pillar 1**

Update regarding recruitment in relation to the areas of work under this pillar.  
Information regarding non-residential customers – top 100 and key programs being undertaken:

- Water Roadmap Diagnostic Tool.
- Water Efficiency Management Plans (WEMP) – including the re-activation of plans developed previously with customers and development of plans with new customers.
- Smart metering.
- Water Bills – update to design and the inclusion of a comparison tool - this will help the customer see where they sit on the water usage spectrum. Also seeking to move large non-residential customers to monthly billing.
- Active Leak detection status and initiatives.

**Pillar 2**

Update regarding recruitment and key projects in relation to the areas of work under this pillar:

- Mardi Water Treatment Plant (MWTP) – update on project – function, contract and status of project overall. Target completion date is November 2025 with first shut downs planned for April 2024.
- Somersby Water Treatment Plant is undergoing maintenance to prepare for the MWTP shutdowns, noted that Council will also receive supply from Hunter Water for the duration of the shutdown.
- Recycled water review and next steps discussed.
- Porters Creek Drought Response Supply Readiness being undertaken.

**Pillar 3**



**Minutes of the Water Management Advisory Committee 28 September 2023 contd**

---

Update regarding recruitment and key projects:

- Drought Response Desalination Readiness – currently procuring support to develop investigation contract specifications
- Purified recycled water readiness – developing a community engagement strategy to enhance common understanding with our community. Also seeking to leverage SWC demonstration plant (visit planned Nov 23) as part of a Water Services Association of Australia (WSAA) event.

Question from the Committee regarding the Mardi Water Treatment Plant stage 3 upgrade, in relation to whether the design is to be peer-reviewed?

It was confirmed that Council has engaged specialist support to assist delivery of the design and construct contract, including commissioning.

**Recommendation**

***That the Committee notes the Water Resilience Project Status Update for September 2023.***

**2.3 Environmental Protection Licence (EPL) non-compliance summary**

---

Presentation by Danielle Hargreaves, Unit Manager Headworks and Treatment, provided an overarching update since the last Committee meeting in February, including highlighting the main points of the report:

- 1 annual return submitted – Kincumber and Woy Woy treatment plants.
- Odour complaints at Bateau Bay – Information in relation to a \$35M upgrade being due – this has been fast tracked and the upgrade is commencing today, due for completion in September 2024.  
Advised of a community meeting at Bateau Bay and outlined the issues and possible options for rectification, with advice that there is ongoing dialogue with community.
- Sewer Rising Main break in April 2023, West Gosford – repairs were undertaken over a number of days. Ultimately looking at reconfiguring and replacing a section of the main, concept design is underway.

**Recommendation**

***The Committee notes the Environmental Protection Licence (EPL) non-compliance summary report.***

**Minutes of the Water Management Advisory Committee 28 September 2023 contd**

---

**2.4 Delivering the IPART Determination - community engagement and customer charter**

---

Presentation by Scott Gordon, Business Manager Business Performance, covering:

- Community engagement process and outcomes.  
The engagement commenced in March -forums, continued in June, with 7 values identified.
- Adoption of the Customer Charter – adopted at September Council meeting held this week. A critical piece is the response matrix.
- Customer Complaints Management Framework was adopted.  
Reduce complaints and have a more proactive approach as a part of this.
- Performance Metrics – including how the community wish to receive this information/have it reported, both in the immediate and long term. It is acknowledged quarterly reporting is a preference. This will also provide the opportunity for early and targeted advice.
- Update regarding draft Community and Education strategy.  
Outline of the approach to engagement and education – focus areas: Community, Youth, First Nations, and Business Community.  
Strategy is currently on exhibition via Council’s engagement platform – YourVoiceOurCoast (yourvoiceourcoast.com) - until 26 October 2023.  
A further report will be presented to Council at the 28 November 2023 Ordinary meeting with the outcomes of the public exhibition.
- Business Continuity Plans were outlined covering water and sewerage, water incident management plan and emergency approaches as well as process and plans relating to bore water. The role of the customer liaison role position was discussed including communication, education and sensitive customers – in addition to overall community focus.

Questions from Committee regarding the Customer Charter, will/does this address other issues such as insurance claims against Council, emergency accommodation, housing issues?

Response with further information regarding insurance - claims are handled by separate area of Council, would need to be addressed on a case by case bases. However the Customer Liaison Officer role would be a contact person to be 'on the ground' during bigger weather/emergency events. Currently the civil crews are the first point of contact, this role will now be part of the customer liaison officer role – the role will encompass a concierge type service.

**Recommendation**

***That the Committee note the report.***

**Minutes of the Water Management Advisory Committee 28 September 2023 contd**

---

**2.5 General business**

---

Query from Committee member re: the level of Developer works in the Water and Sewer space?

Response provided: Water Management Act applications had slowed, as interest rates had risen. However volume of applications has increased over the last few months. Large developments, for example in Warnervale, are continuing and large pieces of work such as works under the M1 Motorway are being undertaken under Works in Kind Agreements.

Works in Kind Agreement policy had been finalised previously. As a part of this process, the developer enters into a formal agreement with Council to deliver the infrastructure, including whether a reduced developer charges amount is due, or a refund available. This is reflected in the capital works program, and there is improved transparency for both parties.

There has been one water assessment team working across all water management act applications. This provides a specialised team reviewing the plans, and another specialist team in the construction and commissioning phases of the works.

**Recommendation**

***Noted that there are no recommendations from the general business discussed.***

**The Meeting** concluded at 3.21pm.

**Next meeting** 30 November 2023, 2pm – 3.30pm, Nexus Building, Wyong

Minutes finalised and endorsed on 20 October 2023.

Jamie Loader  
Director Water and Sewer  
*Chairperson*

Luke Drury  
Section Manager Assets and Planning  
*Coordinator*

## Minutes of the Water Management Advisory Committee 28 September 2023 contd

Action Number	Meeting Date	Action	Responsible Party	Action Update	Status
24	27/5/20	Staff to provide a table as a Standing Agenda Item, as presented in the Briefing Note on Water Resilience Works that lists each project and provides a brief status at each Water Management Committee Meeting.	Water and Sewer staff	Ongoing – to be included in future agendas	Complete
35	12/8/20	Staff to provide ongoing annual summaries to the Advisory Group of any breaches of Environment Protection Licence's after the relevant annual returns are submitted as well as an update on any major incidents in the network should they occur.	Water and Sewer staff	Ongoing – to be included in future agendas	Complete
42	22/7/2022	Unit Manager Headworks and Treatment to contact Committee member to confirm these access arrangements and that the area is still open for public access, generally, and further facilitate that this is being conveyed and made available.	Unit Manager Headworks and Treatment	Access arrangements to confirmed, contact is Liz Knight.	Complete
43	28/9/2022	CCC Asset and Planning is seeking feedback from WMAC on the following matters:  Requesting feedback and input from Committee members, specifically regarding the 12 outcomes and their views on what may be of interest to the community.	Project Manager Integrated Water Cycle Management	Initial feedback being sought following September 2022 WMAC meeting. Feedback due COB Monday 31 October 2022.	Complete
44	28/02/2023	Noted a Committee member has provided feedback via email which addresses some aspects in relation to outstanding action items.	Unit Manager, Assets and Planning / Water and Sewer staff	The Coordinator noted he would review and come back with more information.	Update provided regarding Customer Liaison position and the work undertaken

**Minutes of the Water Management Advisory Committee 28 September 2023 contd**

<b>Action Number</b>	<b>Meeting Date</b>	<b>Action</b>	<b>Responsible Party</b>	<b>Action Update</b>	<b>Status</b>
					by this staff member and the team. Complete.
45	28/02/2023	Request for interest and availability from Committee to attend either of the forums – 1 & 2 March and 9 & 10 May Email will be sent to WMAC members, with further information and form, seeking response by end of week.	Project Manager Integrated Water Cycle Management	Meeting Support staff to distribute EOI and further information.	Complete.
46	28/02/2023	Question regarding unsealed roads/roadway maintenance meet objectives – this will be followed up with information to be provided to the Committee.	Water and Sewer staff	Response provided via memo included in the September 2023 WMAC Agenda.	Complete



**Item No:** 2.1  
**Title:** Water Supply System Status Report  
**Department:** Assets, Infrastructure and Business

---

3 April 2024 Water Management Advisory Committee

Reference: F2019/01200 - D16075788  
Author: Satpal Singh, Lead Engineer Water Resilience. Assets and Planning  
Manager: Luke Drury, Section Manager. Assets and Projects  
Executive: Jamie Loader, Director Water and Sewer Acting Director Water & Sewer

## **Recommendation**

***That the Committee notes the Water Supply System Status report for February 2024.***

### **Report purpose**

To provide the Committee with a summary of the status of the water supply system (Action Item 9).

### **Executive Summary**

The Water Supply System Status report provides the Committee with a summary of the status of the Central Coast water supply system including dam storage levels, headworks operations statistics, water restrictions, status of important headworks assets, Hunter water storage levels and transfers, and climatic forecasts.

### **Background**

The Water Management Advisory Committee (WMAC) requested staff to provide a summary of the status of the Central Coast water supply system, as a Standing Agenda Item (Action Item 24).

### **Current Status**

#### **1. Summary**

Total system storage has dropped to 90.13% as on 21/02/2024. Mangrove Creek Dam (MCD) has dropped to 91.74% which had resulted in swapping source water back to Mardi Dam for Mardi Water Treatment Plant (MWTP) as per Water Supply Strategy rules. Upper Mooney Dam (UMD) is currently around 65.05% and is being preserved until Mangrove Creek Pump station mechanical and electrical issues are resolved. Mardi dam is currently at 64.27% and is supplying MWTP.

## 2.1 Water Supply System Status Report (cont'd)

There has been below average rainfall in the water supply catchment in the previous calendar year and so far this year. As a result, there were less stream flows available to be harvested. Wyong and Ourimbah sources have pumped 1,299 and 2,020 ML so far in this financial year.

Somersby Water Treatment Plant (SWTP) is currently using water releases from Mangrove Creek Dam.

El Niño continues to weaken, despite recent tropical fluctuations. International climate models suggest the central tropical Pacific Ocean will continue to cool in the coming months, with four of seven climate models indicating the central Pacific is likely to return to neutral El Niño–Southern Oscillation (ENSO) levels in April.

The average weekly demand during the summer months was about 653ML. The maximum weekly demand during same period was 736ML.

Hunter Water Storage level is 82.3% as of 20 February 2024. Currently Central Coast is supplying Hunter about 5ML/day in water quality mode.

### Report

#### 1. Headworks Operations Statistics

The table below is the summary of where the water has been sourced from for supply, water demand, storage levels and other important information for Central Coast water supply for the report period.

**Table 1 Headworks Operations Statistics**

	Dec 2023	Jan 2024	Feb 2024 (Until 21/02/2024)
<b>Total Water Sourced for Supply (ML)</b>			
MCD Release and Run of River D/S of MCD @ SWTP	1,186	1,242	1,085
Upper Mooney Dam @ SWTP	126	121	1
MCD Release @ MWTP/Mardi Dam	1,747	1,500	-
Mardi Dam @ MWTP	1,421	1,443	920
Woy Woy Bores @ GWTP-Woy Woy	0	0	0
Net Hunter Transfers (+ from HW and – to HW)	17	129	-102
<b>Total Demand (ML)</b>	2,968	2,912	1,906
<b>Mardi Mangrove Transfers (ML)</b>			
To Mangrove Dam	-	-	-
To Mardi Dam / Mardi WTP	1,747	1,500	-
To Mangrove Creek	1,092	1,176	985

## 2.1 Water Supply System Status Report (cont'd)

<b>Rainfall (mm)</b>			
MCD Rainfall	68	76	65
Mardi WTP Rainfall	96	55	87
Upper Mooney Dam	113	97	79
<b>Total Sourced from environment for Storages (ML)</b>			
Wyong River to Mardi Dam	229	166	28
Ourimbah Creek to Mardi Dam	334	218	145
Mangrove Creek Weir (run of river) to MMD via Spur Main	0	0	0
Mangrove Bore field to Mangrove Creek Weir	0	0	0
Ourimbah / Bangalow Bore field to Mardi Dam	0	0	0
<b>Central Coast end of period Storage Levels (%)</b>			
Total Storage	91.7	90.6	90.1
Mangrove Creek Dam	93.5	92.1	91.7
Upper Mooney Dam	51.8	58.8	65.0
Mardi Dam	69.1	73.6	64.3
<b>Hunter Water end of period Storage Levels (%)</b>	83.4	80.5	82.3

## 2. Water Restrictions

The Council adopted triggers for Central Coast water restrictions are tabulated below. Water restrictions start at Level 1 when Mangrove Creek Dam storage falls to 50%.

**Table 2 Water Restriction Triggers**

<b>Restriction Level</b>	<b>Initiate Restriction Level when Mangrove Creek Dam falls to</b>	<b>Remove Restriction Level when Mangrove Creek Dam rises to</b>
Level 1	50%	55%
Level 2	40%	42%
Level 3	35%	37%
Level 4	30%	32%
Level 5	25%	27%

The restriction triggers are presented as a guide that should be applied within the overall context of the relevant factors influencing the security of the supply such as:

- The seasonal outlook (for stream flows, rainfall, and temperature)
- Achievement of the current restriction target
- The timing and risk associated with any contingency water supplies, and
- Any other relevant information.



Council transitioned from Level 1 Restrictions to Water Wise Rules on 7 December 2020.

### 3. Status of Important Headworks Assets

The table below is the list of operations affected or at risk / offline by any current or potential asset issues. These affected operations and may or may not have an impact on system yield.

**Table 3 Status of Important Headworks Assets**

Operation Impacted	Status	Asset Impacting	Status Comments	Date due back in service	Responsible Officer for return to service
Raw Water Transfers to Mardi Dam	Available				
Mardi to Mangrove Transfers	Available				
Raw Water Transfers from MCW	Impacting Yield	Lower Mangrove Water Pumpstation – Reliability issues resulting in retention of water in Upper Mooney Dam as contingency and releases from Mangrove Creek Dam instead to meet demand.	<p>Pump 1,2,6 &amp; 8 - available</p> <p>Pump 3 - ready for testing after new mechanical seal and bearings</p> <p>Pump 4 - due back from refurbishment late March 2024, with install planned for April, but won't be available, as motor 4 has had major issues discovered. Currently sourcing quotes for new 2000 kW motor.</p> <p>Pump 5 - discharge isolation valve being replaced 27/28 Feb. Planning on returning to service afternoon of 28 Feb 2024</p> <p>Pump 7 - due back from refurbishment late March, to be commissioned in April</p>		Phil Thaux

## 2.1 Water Supply System Status Report (cont'd)

Operation Impacted	Status	Asset Impacting	Status Comments	Date due back in service	Responsible Officer for return to service
Mooney Dam to WTP	Available		Pump 2 offline due to electrical issues since July 2023 is now back online		
Mardi Dam to MWTP	Available				
Coastal Transfers	Available				
Western Transfers	Available				
HW Transfers	Available				
Woy Woy Borefield	Mothballed				

### 4. Dam Storage Levels

As of 21 February 2024, total storage is 90.13%, MCD storage level is 91.75%, UMD and Mardi Dams are currently at 65.05% and 64.27% respectively.

**Figure 1 Total Dam Storage Level**

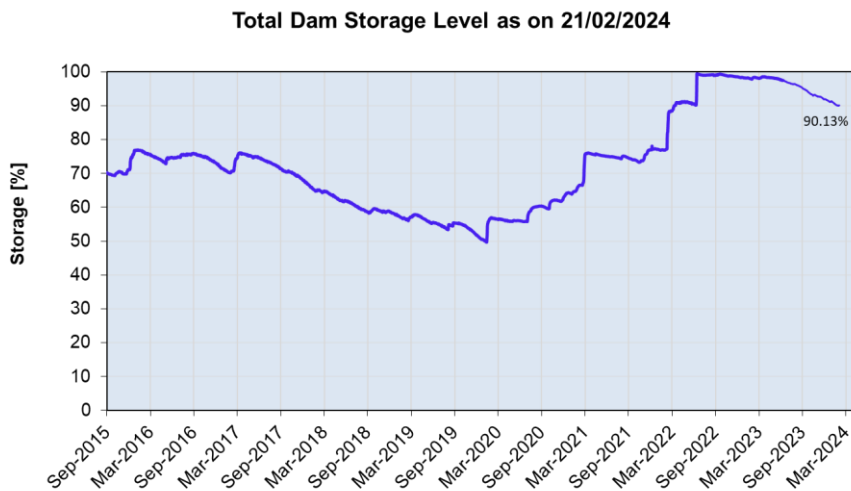


Figure 2 Mangrove Creek Dam Storage Level

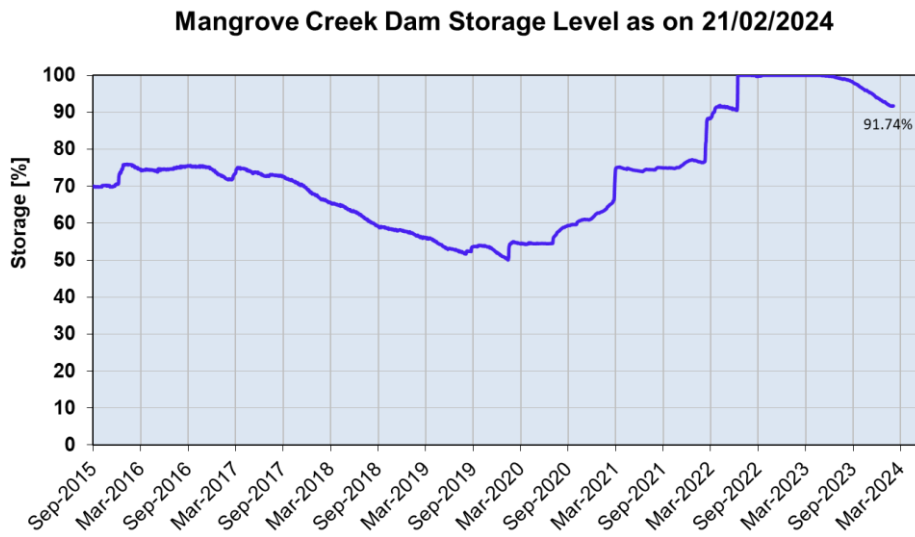


Figure 3 Upper Mooney Dam Storage Level

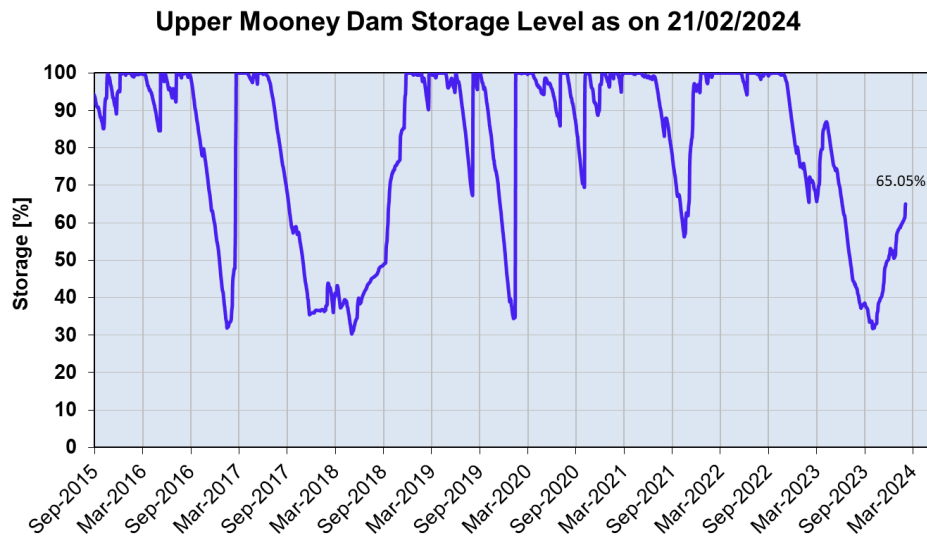
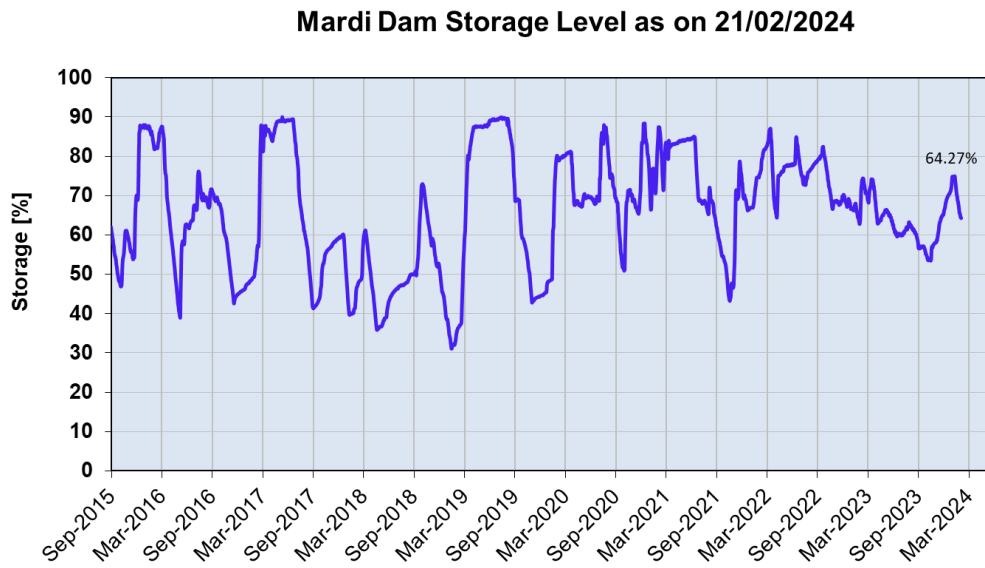


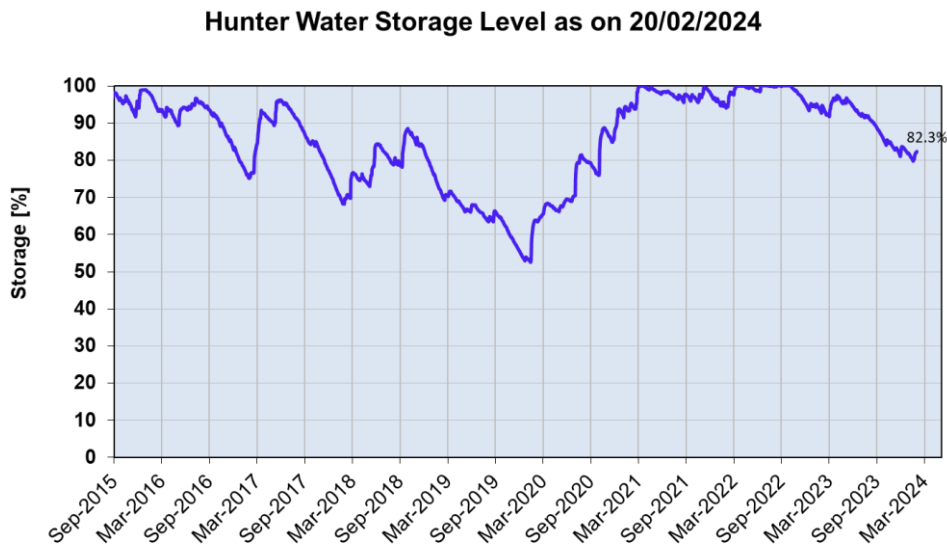
Figure 4 Mardi Dam Storage Level



**5. Hunter Water Storage Level and Transfers**

As of 2 August 2023, Hunter Water’s storage is 82.3%. Currently water transfers are happening at around 5 ML/day from Central Coast to Hunter Water in water quality mode. Inter-regional transfers from April 2024 will enter bulk transfer mode, switching direction back and forth as both organisations manage significant capital works and associated asset shutdowns.

Figure 5 Hunter Water Storage Level



## 6. Groundwater

### Woy Woy Borefield

Currently bores are run once a month to keep operational and for basic water quality readings. The extracted water is bypassed to sewer and water treatment plant remains mothballed.

## 7. Rainfall

Table 4 shows long term annual and monthly average (current month) rainfalls with up to date annual and monthly rainfall for the current year and the month.

**Table 4 Rainfall Statistics**

Period	Rainfall mm				
	Gosford <sup>1</sup>	Norah Head <sup>2</sup>	Mangrove Creek Dam <sup>3</sup>	Mardi WTP	Mooney Dam
Total for 2023	858	897	725	815	906
Total for 2024 up to 21 Feb 2024	205	173	140	141	176
Long Term Annual* Average	1,350	1,214	953	-	-
Monthly to 21 Feb 2024	114	106	65	85	79
Long Term Monthly Average (Feb)	168	142	126	-	-

1. BOM Station 061319 (closed 2015) data from 1985 to 2015 has been used for long term average figures and BOM

Station 061425 (opened 2013) data has been used for 2021 to 2022 figures

2. BOM station 061273 (closed 2004) data from 1970 to 2004 has been used for long term average figures and BOM station 061366 (opened 1989) data has been used for 2021 to 2022 figures

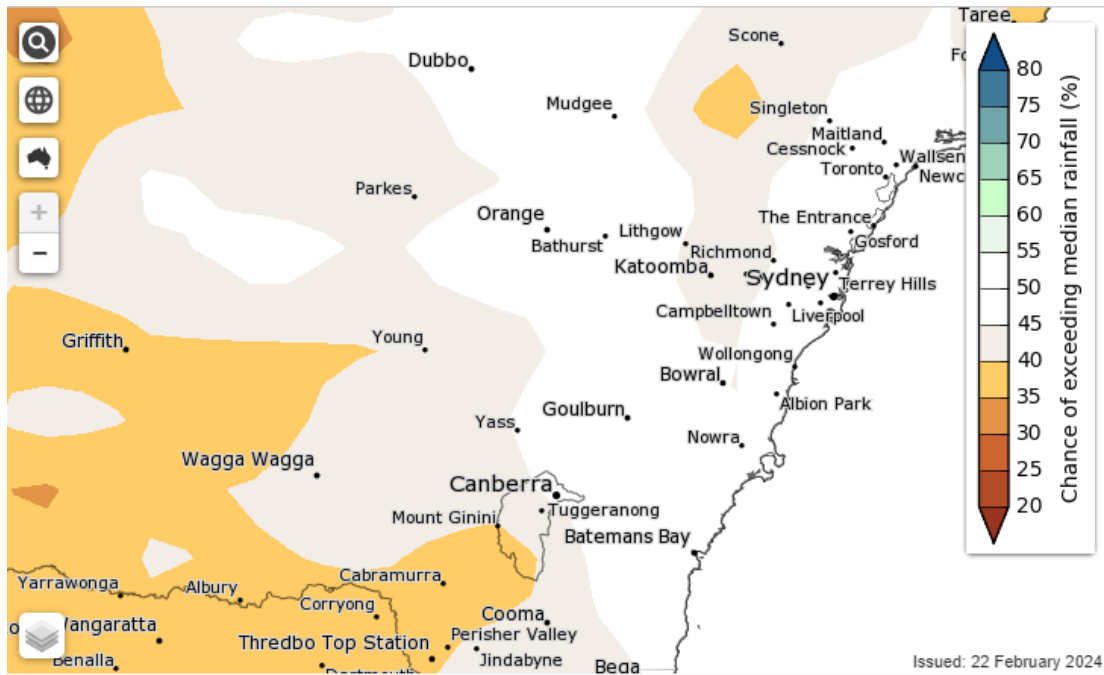
3. BOM Station 061394 (opened 1982) data from 1982 to 2020 has been used for long term average figures

\* Calendar year

### 8. Seasonal Outlook for Rainfall and Temperature

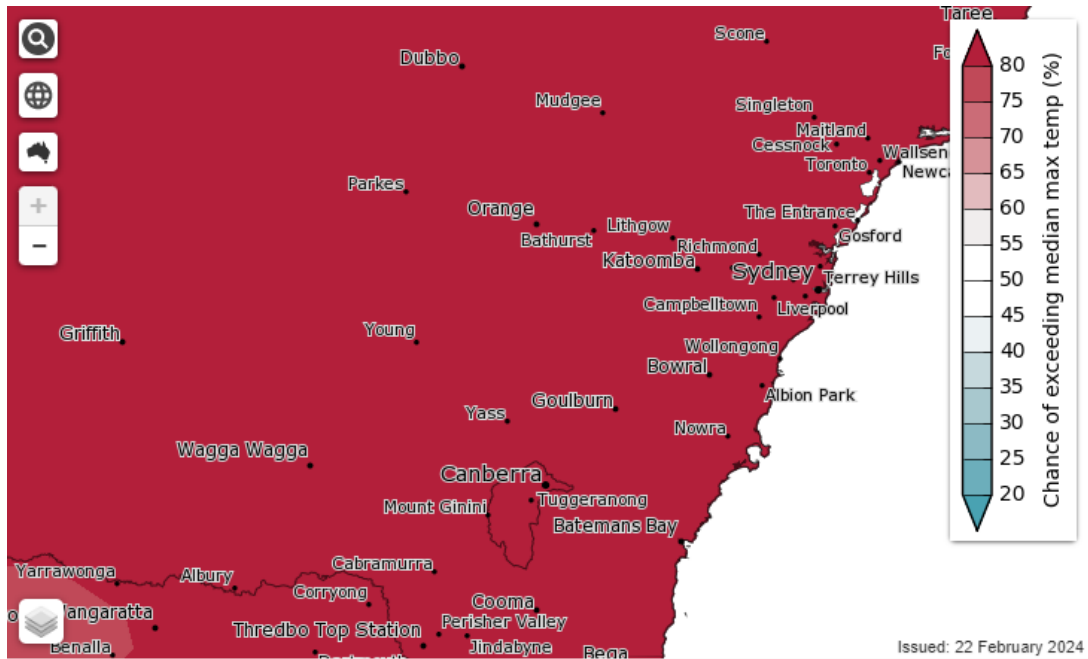
The seasonal rainfall outlook issued by the Bureau of Meteorology on 22/02/2024 predicts 45-55% chance of exceeding the median rainfall for Central Coast in the three-month period from March to May 2024 (refer **Figure 6**).

Figure 6. Chance of exceeding median rainfall



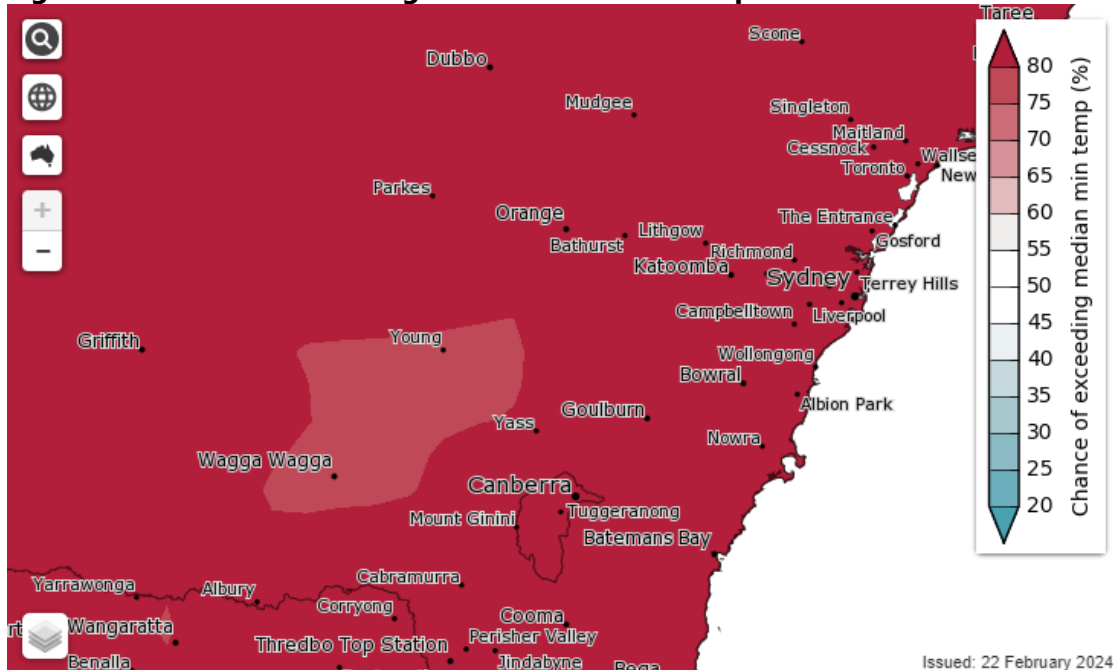
The seasonal projections for the Central Coast region predict above 80% chance of exceeding the median maximum temperatures during the three-month period from March to May 2024 (refer **Figure 7**).

Figure 7. Chance of exceeding median maximum temperature



The seasonal projections predict above 80% chance of exceeding the median minimum temperatures during the three-month period from March to May 2024 (Refer **Figure 8**).

**Figure 8. Chance of exceeding median minimum temperatures**



## 9. Climate Driver Update

### El Niño continues to weaken, despite recent tropical fluctuations.

*El Niño persists, although a steady weakening trend is evident in the oceanic indicators. Sea surface temperatures in the central tropical Pacific and temperatures in the Pacific sub-surface show a clear cooling trend, in line with typical event decay. Atmospheric indicators have been mixed over the past fortnight; cloudiness near the Date Line has increased, while the 30-day Southern Oscillation Index (SOI) has returned to negative values (both characteristic of an El Niño state). This is expected to be a temporary fluctuation (often observed during summer) and most likely the result of the slow-moving Madden Julian Oscillation in the region.*

*International climate models suggest the central tropical Pacific Ocean will continue to cool in the coming months, with four of seven climate models indicating the central Pacific is likely to return to neutral El Niño–Southern Oscillation (ENSO) levels in April (i.e., neither El Niño nor La Niña), and all models neutral in May. ENSO predictions made in late summer and autumn tend to have lower accuracy than predictions made at other times of the year. This means that current forecasts of the ENSO state beyond May should be used with caution.*

*Based on the historical record from 1900, around 50% of El Niño events have been followed by a neutral year, and 40–50% have been followed by La Niña. However, global oceans have*



## 2.1 Water Supply System Status Report (cont'd)

---

warmed significantly over the past 50 years. The oceans have been the warmest on record globally between April 2023 and January 2024. These changes may make a difference when predicting future ENSO events based on historical activity.

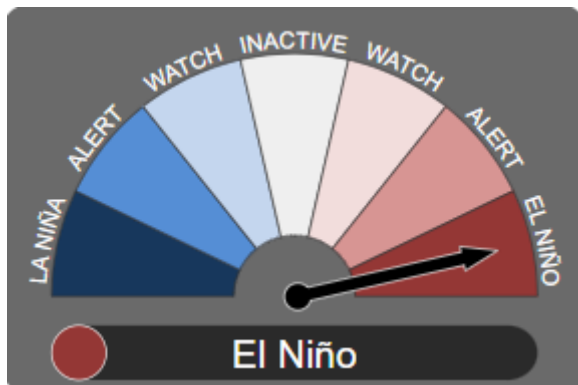
The Indian Ocean Dipole (IOD) is neutral. The majority of model forecasts indicate the IOD will be neutral until at least April, consistent with the annual cycle of the IOD.

The Southern Annular Mode (SAM) index is currently positive as at 17 February. Forecasts indicate the SAM index will fall briefly to negative SAM levels over the coming week, and then back to neutral SAM levels for the remainder of the coming fortnight. Neutral SAM has little influence on Australian rainfall patterns.

The Madden–Julian Oscillation (MJO) has weakened significantly in the central Pacific Ocean in the past week and is now weak or indiscernible. All international climate models indicate the MJO will remain weak in the coming week, with some models suggesting a strengthening in Maritime Continent at the start of March.

The global mean temperature for the 12 months February 2023 to January 2024 was the highest on record, with Copernicus reporting that it was 1.52 °C above the 1850–1900 pre-industrial average. However, the magnitude of global warming is assessed using multi-year averages, and a single 12-month period does not mean that the 1.5 °C target referred to in the Paris Agreement has been exceeded.

Australia's climate has warmed by  $1.50 \pm 0.23$  °C between 1910 and 2023, leading to an increase in the frequency of extreme heat events. In recent decades, there has also been a trend towards a greater proportion of rainfall from high intensity, short duration rainfall events, especially across northern Australia during the wet season. April to October rainfall has declined across southern Australia in recent decades, due to a combination of long-term natural variability and changes in atmospheric circulation caused by increasing greenhouse gas concentrations.

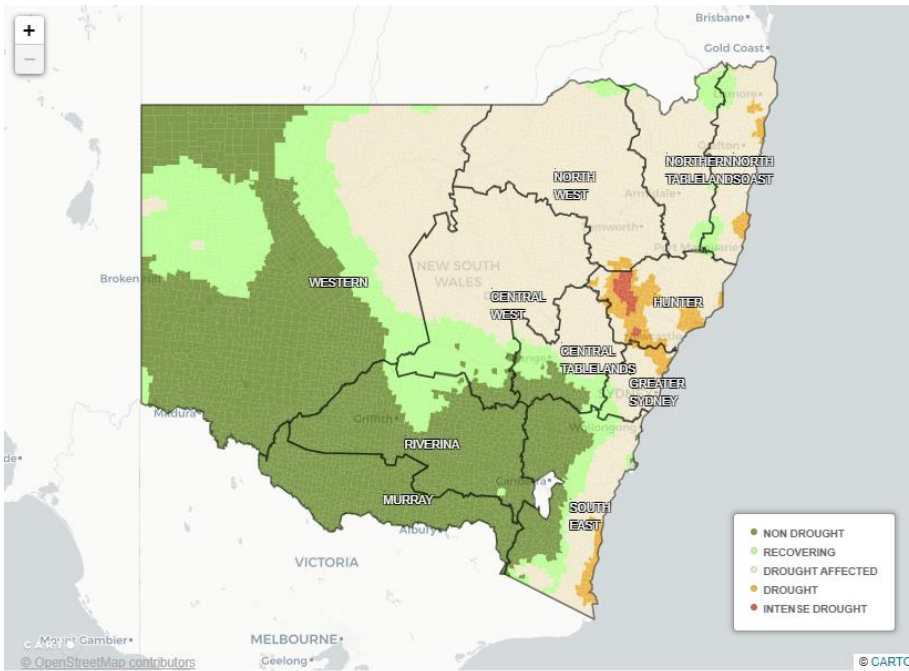


Issued 20 Feb 2024

Next Issue: 5 Mar 2024

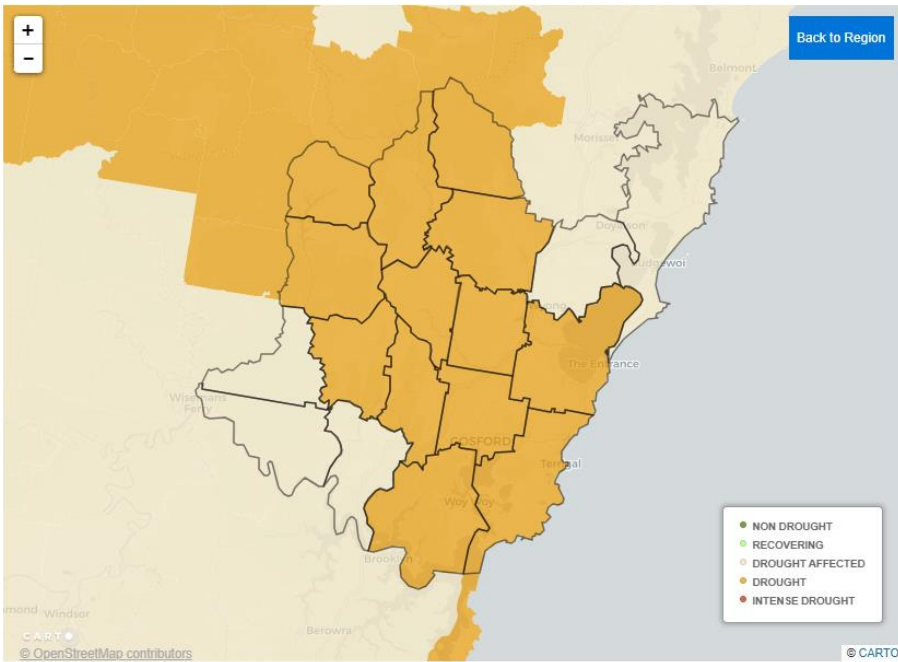
### 10. Department of Primary Industry Combined Drought Indicator

Figure 8 Combined Drought Indicator map for NSW



Data current to 19/2/2024 (AEDT)

Figure 9 Combined Drought Indicator map for the Central Coast

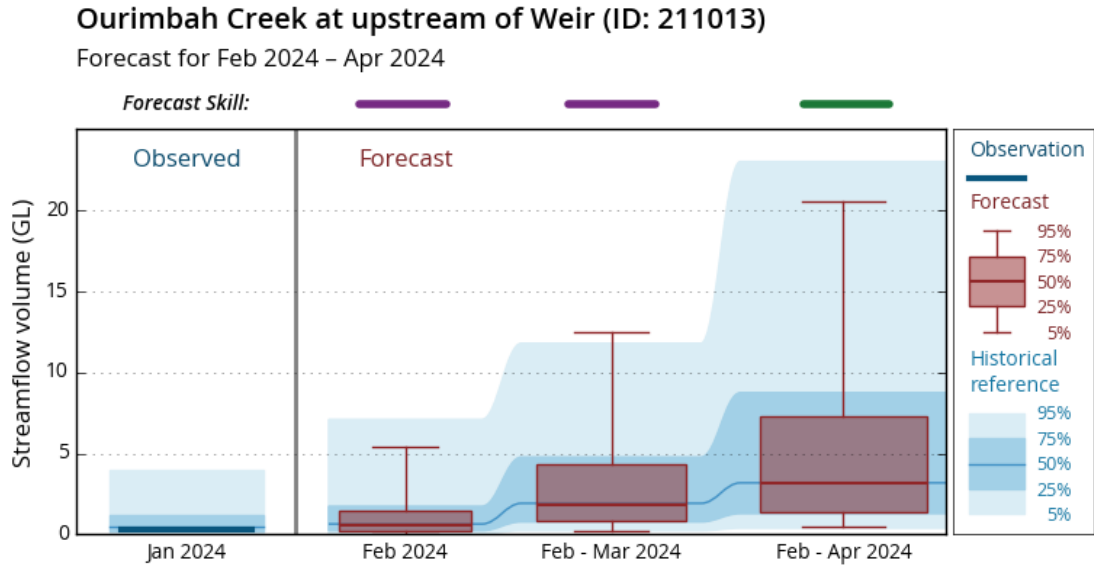


Data current to 19/2/2024 (AEDT)

11. Forecast for Ourimbah Creek streamflow

- The Bureau of Meteorology forecast stream flow for the Ourimbah Creek (211013) as shown in the Box Plot and table of statistics below along with historical references.

Figure 10 Forecast streamflow for Ourimbah Creek at upstream of weir (211013)



Generated: 19:42 05/02/2024 (ver. 2.9.0)

©Commonwealth of Australia 2024, Bureau of Meteorology



Unless otherwise noted, all material on this page is licensed under the [Creative Commons Attribution 4.0 International Licence](https://creativecommons.org/licenses/by/4.0/)

Table 5 Ourimbah Creek at upstream of weir streamflow Forecast Statistics

Forecast boxplots Ourimbah Creek at upstream of Weir (ID: 211013) February 2024 - April 2024									
Percentile	Streamflow forecast (GL)			Historical reference (GL)			Historical reference for observation (GL)	Recent observation (GL)	
	Feb	Feb - Mar	Feb - Apr	Feb	Feb - Mar	Feb - Apr			
5%	0.1	0.2	0.5	0.1	0.2	0.4	0.1	0.3	
25%	0.2	0.8	1.4	0.2	0.8	1.3	0.2	0.3	
50%	0.6	1.9	3.2	0.6	1.9	3.2	0.5	0.3	
75%	1.5	4.4	7.3	1.7	4.8	8.8	1.2	0.3	
95%	5.4	12.5	20.6	7.1	11.8	23.0	3.9	0.3	

12. Water Demand

The Figure 11 shows the how daily water demand is impacted by daily maximum temperatures and daily rainfall. Temperature and rainfall parameters in Figure 11 are for Gosford AWS 61425-BOM and rainfall from Mardi Dam (MHL). It shows that customer demand is quite associated with max temperature variation. The daily rainfall also impacts the demand, but this relationship can be complex depending upon amount and frequency of rainfall.

Other demand graphs show historical monthly and weekly demand for the Central Coast Council for longer periods.

Figure 11 Daily Water Demands Vs Temp /Rain

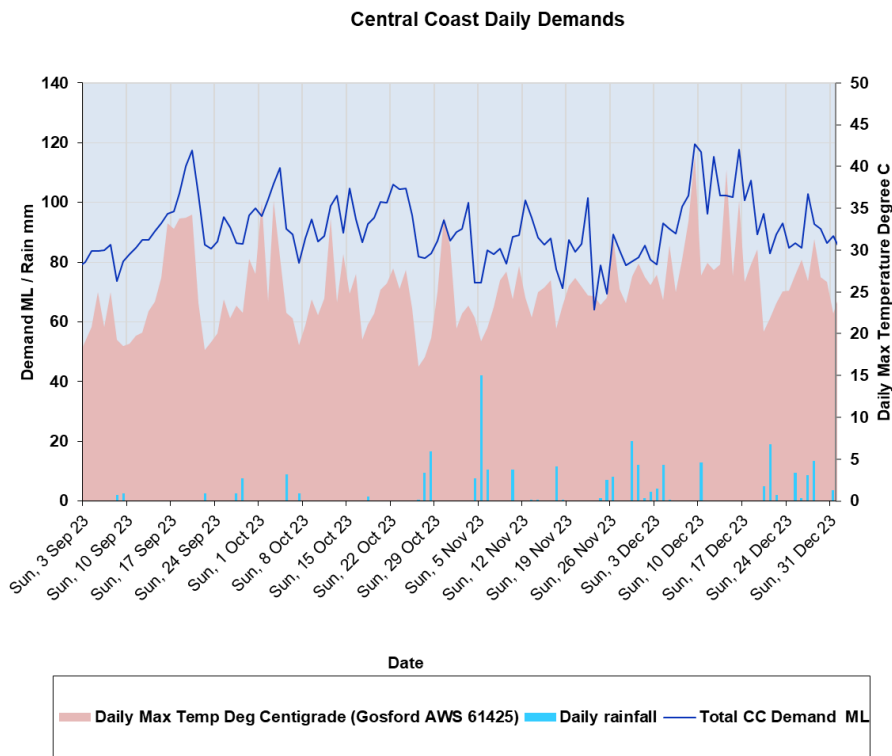


Figure 12 Monthly Water Demand for Central Coast Council

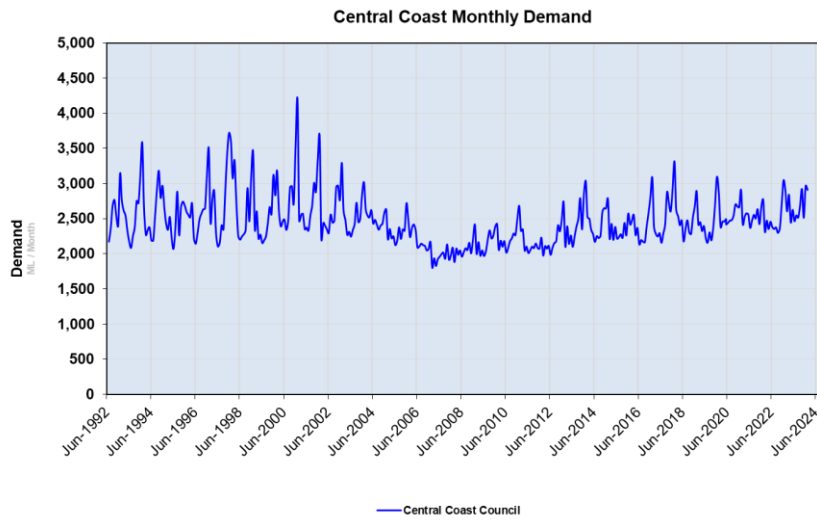
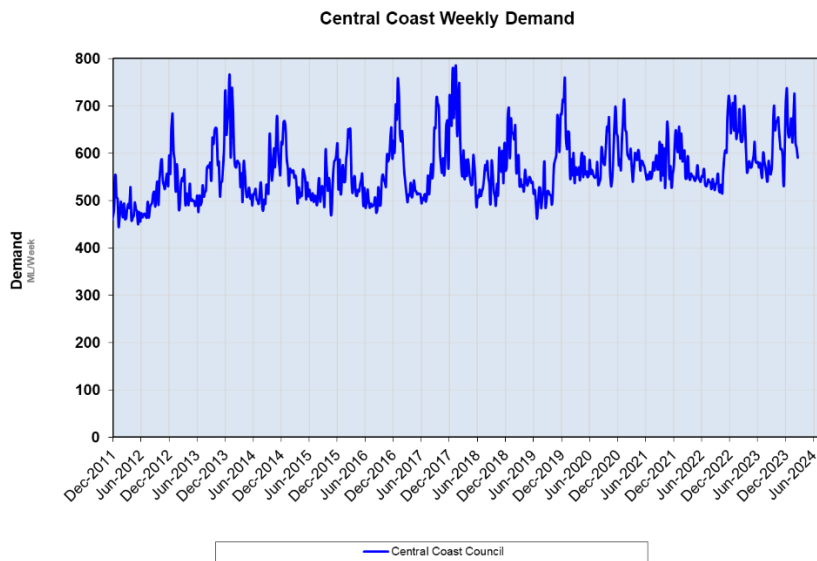
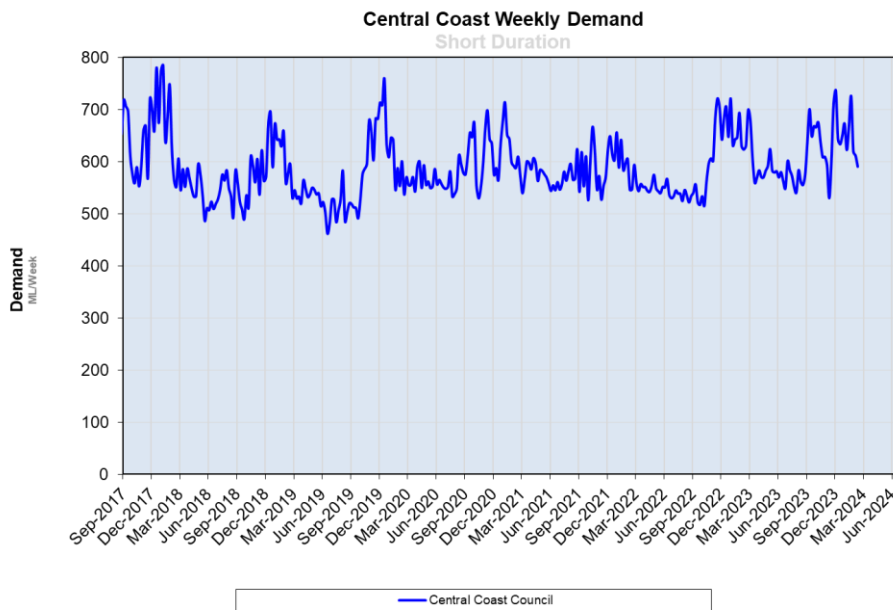


Figure 13 Weekly Water Demand for Central Coast Council



**Figure 14 Weekly Water Demand (short term) for Central Coast Council**

### Link to Community Strategic Plan

Theme 4: Responsible

### Goal H: Delivering essential infrastructure

R-H4: Plan for adequate and sustainable infrastructure to meet future demand for transport, energy, telecommunications and a secure supply of drinking water.

### Risk Management

Current actions to mitigate risks associated water security are outlined in the 'Water Resilience Project Status Update 28 September 2023'.

### Options

1. That the Committee note the report

### Attachments

Nil



**Item No:** 2.2  
**Title:** Environmental Protection Licence (EPL) Non-compliance Summary  
**Department:** Assets, Infrastructure and Business

---

3 April 2024 Water Management Advisory Committee

Reference: F2019/01200 - D16075862  
Author: Stephen Shinnars, Team Leader Water Compliance  
Unit Manager: Danielle Hargreaves, Unit Manager, Headworks and Treatment  
Executive: Jamie Loader, Director Water and Sewer

## **Recommendation**

***The Committee notes the Environmental Protection Licence (EPL) non-compliance summary report.***

## **Report purpose**

To provide the Committee with a summary of the recent Environmental Protection Licence (EPL) non-compliances.

## **Executive Summary**

Breaches of Environmental Protection Licences following relevant annual returns are submitted to the Advisory Committee to note. This includes updates on any major incidents in the network (Action Number 35).

Over the recent period the EPL annual return was submitted to the EPA for EPL 2647 – North Sewage Treatment System, and EPL 1942 – Bateau Bay Sewage Treatment System. Three instances of non-conformance in total were reported; one for EPL 1942 and two for EPL 2647.

Council has continued to undertake activities following two incidences previously reported to this Committee; a large number of odour complaints for Bateau Bay Sewage Treatment Plant, and a rising main break at West Gosford.

## **Background**

Central Coast Council (CCC) has three Environmental Protection Licences (EPLs) that relate to the management and operation of its sewerage schemes. The EPLs are based on the respective outfalls which may include multiple Sewage Treatment Plants (STPs). The EPLs are regulated by the NSW Environment Protection Authority (EPA) and the current EPLs and associated STPs are outlined below:

## 2.2 Environmental Protection Licence (EPL) Non-compliance Summary (cont'd)

---

- EPL 1802 – South Sewage Treatment System
  - Kincumber STP
  - Woy Woy STP
  
- EPL 1942 – Bateau Bay Sewage Treatment System
  - Bateau Bay STP
  
- EPL 2647 – North Sewage Treatment System
  - Charmhaven STP
  - Gwandalan STP
  - Mannering Park STP
  - Toukley STP
  - Wyong South STP

All three EPLs were reviewed by CCC and EPA in 2021. A number of changes to monitoring points and pollutant concentration limits were incorporated into the updated EPLs issued by EPA. The daily flow limit to the Norah Head outfall for EPL 2647 was increased from 40,000 kL to 60,000 kL.

It is noted that CCC operates within other EPLs that relate to the Mooney Mooney and Cheero Point sewage reticulation system, Waste Management Facilities and certain waterways. Those EPLs are not discussed within this document. Full details relating to each EPL held by CCC can be found at the [Council website](#).

### **Current Status**

Council submitted an Annual Return for EPLs 2647 and 1942 in February 2024. Three instances of non-conformance with conditions of these EPLs were reported and are summarised below.



**2.2 Environmental Protection Licence (EPL) Non-compliance Summary (cont'd)**

---

**Report**

**EPL 2647:**

<b>Non-Conformance</b>	<b>Actions Taken</b>
<p>Condition L2.2: Calculated loads of Total Nitrogen and Total Suspended Solids discharged over the reporting year was above the limits specified in the EPL</p>	<p>Condition L2.2: Wyong South effluent was primarily pumped from the dry weather pond to reduce solids concentration at the Norah Head outfall. Desludging activities have increased at all STPs to improve solids management and reduce pollutant loads to the ocean outfall.</p> <p>Consultants have been appointed and are currently undertaking design options for improving capacity and performance of Gwandalan, Charmhaven, Wyong South, and Toukley STPs and the associated effluent transfer network.</p>
<p>Condition L3.4: 3 Day Geometric Mean (3DGM) was not determined on Day 2 and 3 samples following an elevated total suspended solids result determined in the routine fortnightly monitoring of final effluent water quality discharged to Norah Head ocean outfall.</p>	<p>Condition L3.4: The contract laboratory service utilised by Council has reconfigured its alert system to notify Council staff by phone and email when effluent water quality concentration limits are triggered.</p> <p>New autosamplers have been installed at the water quality monitoring that provide additional refrigerated storage capacity for the collected samples. Following routine fortnightly water quality sampling, Day 2 and 3 samples of final effluent discharged to Norah Head ocean outfall are provided to Council's laboratory for storage. These samples are only discarded after water quality data have been received from the contact laboratory and reviewed by Council laboratory staff.</p>

## 2.2 Environmental Protection Licence (EPL) Non-compliance Summary (cont'd)

### EPL 1942:

Non-Conformance	Actions Taken
<p>Condition L2.2: The concentration of ammonia in the final effluent to Wonga Point ocean outfall was 37 mg/L, above the 100<sup>th</sup> percentile limit of 30 mg/L</p> <p>(N.B. this issue is related to the non-conformance reported at the end of the 2022 annual reporting period)</p>	<p>Condition L2.2: The aeration basin of the treatment plant was reseeded with sewage sludge from a less affected part of the treatment plant, in order to recover biological processes and stabilise the operation of the plant.</p> <p>Increased process monitoring over periods of high load to the plant to help identify process disturbances more promptly and assist in identifying the source of contamination that may disrupt sewage treatment processes.</p>

### Other Issues:

Bateau Bay Sewage Treatment Plant:

Following receipt of a number of odour complaints from the Bateau Bay community that can be attributed to operations at the Bateau Bay Sewage Treatment Plant, Council has undertaken a number of immediate, short- and long-term deliverables to address the issue. This includes commencement of an Odour, Corrosion and Septicity Study.

EPA has included a Pollution Reduction Program in EPL 1942, with the following actions to be delivered by 30 November 2024:

- upgrade the existing Odour Control Facility at Bateau Bay STP;
- replacement of activated carbon media in the sedimentation tank odour control unit
- implement the optimisation exercise using odour data loggers at the inlet works to monitor chemical dosing effectiveness in managing odour; and
- investigation into a deodorisation system.

West Gosford Major Sewer Rising Main:

Council has continued to provide information on request and participate in interviews with EPA following discharge of a large volume of sewage to Narara Creek on 13 April 2023 due to corrosion of the West Gosford Major Sewer Rising Main at West Gosford.

### Link to Community Strategic Plan

Theme 4: Responsible

**Goal H: Delivering essential infrastructure**

G-E2: Improve water quality for beaches, lakes and waterways by minimising pollutants and preventing litter entering our waterways.

**Risk Management**

Actions taken or proposed to manage the risks associated with each non-compliance are listed in the above table.

**Attachments**

Nil



**Item No:** 2.3  
**Title:** Update on Water and Sewer Masterplan  
**Department:** Water and Sewer

---

3 April 2024 Water Management Advisory Committee

Reference: F2019/01200 - D16076051  
Author: Kate Gibbs, Executive Support Officer  
Manager: Luke Drury, Section Manager. Assets and Projects  
Executive: Jamie Loader, Director Water and Sewer

## **Recommendation**

***That the Water Management Advisory Committee (WMAC) notes the report.***

### **Report purpose**

To provide the WMAC with an update on the development of scope of works for the Water and Sewer Masterplan. The WMAC is also provided a final opportunity to identify any additional key issues to be included in the scope of works.

## **Background/Report**

Since the amalgamation of Gosford City and Wyong Shire Councils in 2016, a consolidated set of strategic planning investigations has not been developed (apart from Central Coast Water Security Plan) to encompass the amalgamated Central Coast Council's service area, operations, and assets. Currently, Council is operating under several legacy strategies and plans.

Additionally, population growth, growing understanding of community expectations and values over time and changes in regulatory requirements also necessitate a comprehensive review of future requirements, developments, and operation of both the water supply and sewerage schemes.

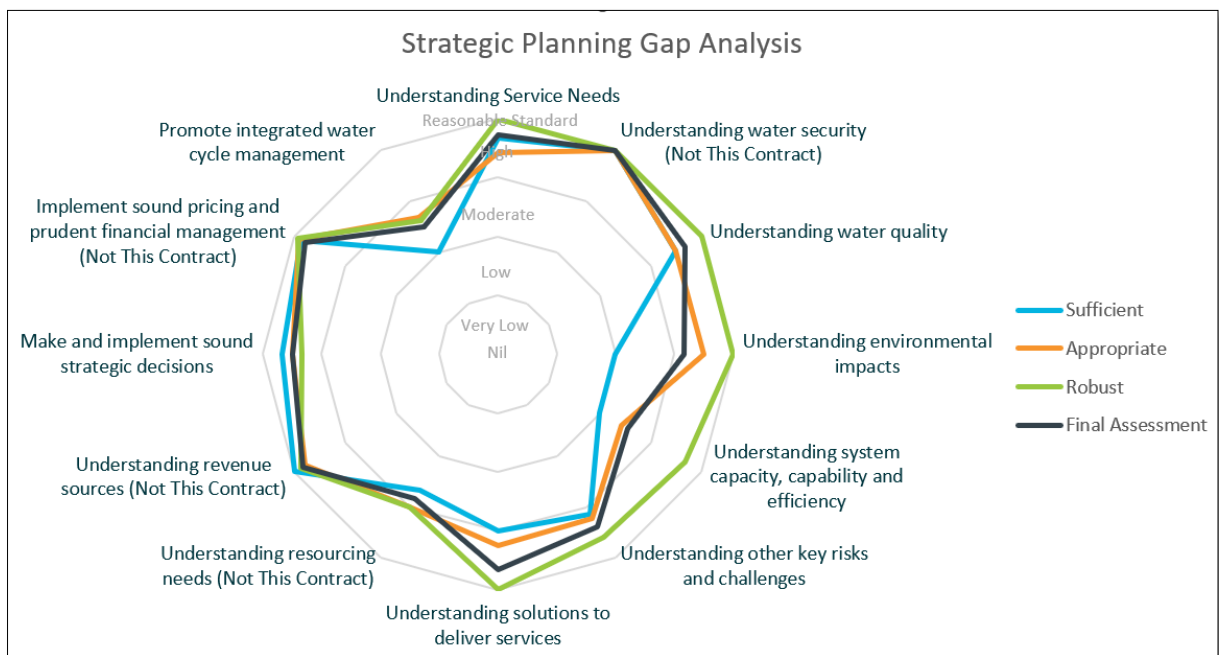
The Department of Planning and Environment (DPE) [now Department of Climate Change, Energy, the Environment and Water (DCCEEW)] published "Regulatory and Assurance Framework for Local Water Utilities" in July 2022 which replaces the previously issued "Integrated Water Cycle Management Strategy Checklist 2019" to achieve a long term integrated strategic plan.

Under the new framework, local water utilities are expected to achieve 12 key strategic planning outcomes to a reasonable standard. The twelve (12) key strategic planning outcomes are:

1. Understanding service needs
2. Understanding water security *(Not form part of this Contract – Already Completed)*
3. Understanding water quality
4. Understanding environmental impacts
5. Understanding system capacity, capability and efficiency
6. Understanding other key risks and challenges
7. Understanding solutions to deliver services
8. Understanding resourcing needs
9. Understanding revenue sources
10. Make and implement sound strategic decisions
11. Implement sound pricing and prudent financial management
12. Promote integrated water cycle management

### Gap Analysis

Central Coast Council engaged a consultant (AECOM) to undertake a gap analysis of its strategic planning for the provision and management of water and sewer services. The gap analysis was performed with reference to the Regulatory and assurance framework for local water utilities (the framework), released by the NSW Department of Planning and Environment in July 2022.



The key findings of the gap analysis are used to develop a scope of works to address the identified planning gaps, to support Council in achieving effective, evidence-based strategic planning in line with the new framework.

Following are key gaps identified:

Understanding system capacity, capability and efficiency

## 2.3 Update on Water and Sewer Masterplan (cont'd)

---

Water and sewage treatment plants need updating to address capacity, capability and performance of current and future infrastructure and asset criticality needs to be understood for networks, southern STPs and WTPs.

### Understanding other key risks and challenges

Discussion required on how organisational resilience to be addressed i.e, site specific management plans for Pump Stations, emergency response planning PRR process should be applied to extreme events other than drought.

### Understanding solutions to deliver services

Asset management practices need to be implemented on a rolling/continuous improvement basis.

Extreme events require broader consideration of uncertainty and preparedness, which can be covered under corporate emergency response planning.

### Promote integrated water cycle management

Planning for full range of IWCM outcomes needs to be considered with consideration for relevant stakeholders and collaborative governance, and interaction of water, wastewater and stormwater services. Plan to incorporate IWCM in the Master Plan.

### Understanding resourcing needs

While the W&S Directorate has been reestablishing its required staffing levels, this has not been reflected in public facing documents prepared under Council's IP&R requirements.

### *Scope of Works Development*

These gaps were used as a basis for preparation of scope of work for the water and sewer masterplan vs objectives to be addressed in Council's next IPART pricing submission or planned updates to key IP&R documents.

Council is currently finalising the scope of works for the development of the water and sewer masterplan. At a minimum, it is expected that the master plan will cover the following:

- Community Engagement to inform planning inputs
- Levels of Service
- Population Forecast
- Service area review including unserviced properties
- Water demands and sewer loads
- Climate change adaptation and system resilience assessment
- Water systems capacity assessment and upgrade needs
- Network water quality review and improvements
- Water leakage and pressure management review
- Wastewater treatment capacity and performance

## 2.3 Update on Water and Sewer Masterplan (cont'd)

---

- Effluent management and outfall capacity
- Sewer overflow management
- Preparation of capital works plans
- Preparation of a Master Plan report

This plan will be delivered along with the technical papers and supporting studies and will be submitted to DCCEEW for their endorsement.

### Current Status

- Scope of works is being finalised
- Scope of works will be consulted with Project Control Group (PCG)
- Tender will be advertised to Engineering Consultancy Panel
- Tender is expected to be advertised in late March/early April
- Tender is proposed to be advertised for 6 weeks
- Expected completion time is between 1.5 to 2 years.

### Consultation

#### *Community Consultation Forums*

Last year, Council conducted four face-to-face community forums (two in Wyong and two in Gosford) to understand community values related to treatment/network planning and identified issues to be considered in long term planning. Community identified following values and their prioritisation:

The order of importance, and indexed weighting given in the forums, for **water supply** was:

- Good water quality – 21%
- Reliable service – 19%
- Affordable service – 19%
- Effective future planning – 15%
- Environmental focus – 14%
- Transparency and education – 12%

In general, there were similar findings in the in-depth interviews and youth group. The Aboriginal and Torres Strait Islander participants placed a slightly greater emphasis on the environmental focus value. They, and the large customers, wanted more information or outcomes within this value – more about what Council is going to do to ensure this value is met. The Youth Group were slightly more concerned with affordability due to the current cost of living increases. Large customers valued transparency and education, particularly a more direct line of communication to Council.

## 2.3 Update on Water and Sewer Masterplan (cont'd)

---

The order of importance, and indexed weighting given at the forums, for **sewerage service** was:

- Reliable service – 20%
- Quality treatment – 20%
- Affordable service – 17%
- Environmental focus – 15%
- Effective future planning – 15%
- Transparency and education – 12%

For these values environment and quality treatment were seen to be very closely related. The youth group focused more on the environment than forum participants and believed that it was more important than affordability in the context of sewerage services. The Aboriginal and Torres Strait Islander participants wanted to see outcomes related to improving Council's relationship with the Indigenous community. They too highlighted the importance of the environment and effective planning. Again, large customers valued transparency and education highly as they recognised that businesses' trade waste can have a high environmental impact.

Initiatives identified in the upcoming Masterplan will need to consider the above values as part of any decision support tools and act as contributors to the outcomes that link to the above values.

### *Community Surveys:*

Council recently completed two (2) online community surveys to address "Connection of Unserviced Properties" in the water and sewer masterplan.

1. The first survey was conducted with the broader community to understand how customers values would influence the timing and location of any potential scheme extensions, how they think risks/opportunities should be assessed and which of the following funding models they support the most for extension of services to connect unserviced properties (excluding private plumbing costs):

- 1) Unserviced Property Owners Funded Only
- 2) Council Funded Only
- 3) Collaborative Contribution between Council and Unserviced Properties Owners

More than 500 participants completed the survey and outcome of the survey was the broader community are interested to include connection of unserviced properties in the water and sewer master planning. Most community members supported the collaborative funded model and then council funded model for the extension of services.

2. A second survey was conducted with unserviced properties residents/businesses only in our LGA in Feb 2024, again seeking to understand how their values would influence the timing and location of any potential scheme extensions and how they think risks/opportunities should be assessed. Instead of discussing potential funding models, initial willingness to pay questions were asked for this group of participants.



More than 1,300 unserved property residents completed the survey. Council is waiting on data and analysis to be issued by the consultant. This will combined with the upcoming engineering assessments to identify potentially viable schemes where more detailed customer engagement makes sense to confirm feasibility.

### **Financial Considerations**

Budget is available to progress with procurement of the Water and Sewer Masterplan in the current financial year and progress delivery of the plan through the 2024/25 and 2025/26 financial years.

### **Link to Community Strategic Plan**

Theme 4: Responsible

### **Choose Focus Area**

R-H4: Plan for adequate and sustainable infrastructure to meet future demand for transport, energy, telecommunications and a secure supply of drinking water.

### **Risk Management**

N/A

### **Options**

That the Committee notes the report

### **Attachments**

*Nil.*



**Item No:** 2.4  
**Title:** Water Resilience Project Status Update  
**Department:** Water and Sewer

---

3 April 2024 Water Management Advisory Committee

Reference: F2019/01200 - D16076407  
Author: Kate Gibbs, Executive Support Officer  
Satpal Singh, Lead Engineer Water Resilience. Assets and Planning  
Manager: Luke Drury, Section Manager. Assets and Projects  
Executive: Jamie Loader, Director Water and Sewer

## **Recommendation**

***That the Committee notes the Water Resilience Project Status Update for September 2023.***

## **Report purpose**

To provide the Water Management Advisory Committee with an update of key water resilience projects for the Central Coast.

## **Executive Summary**

The Water Resilience Project Status report provides an update on the water security works that are currently underway and the status of each project.

These works are reported within the three pillars identified in the Central Coast Water Security Plan (CCWSP):

- Pillar 1 Conserve and use water efficiently
- Pillar 2 Maximise existing water supplies to delay new water supplies
- Pillar 3 Develop new rainfall independent water supplies for an adaptive future.

## **Report**

### **1. Pillar 1 Conserve and use water efficiently**

#### **1.1. Overview**

Water conservation and efficiency is the cornerstone of our Water Security Plan. Achieving long term reductions in demand increases the resilience of the water supply to population growth and future drought.

Council outlined the key resources and activities required to develop and implement a long-term water conservation program within its Water Resilience Step Change Business Case in the 2021 IPART submission. The following roles were filled last year to assist the program:

- Strategy Lead Water Conservation-1
- Water Education Officers-2
- Water Communications Officer-2

Unfortunately, the role of Strategy Lead Conservation has fallen vacant again since mid-December 2023. The first attempt to fill this role was unsuccessful. It is proposed to restart the process again in March 2024 to fill this role.

### 1.2. Development of Water Conservation Strategy

During the development of Central Coast Water Security Plan (CCWSP), an “all options on the table” approach was followed. The conservation of water resources is a critical component of effective and environmentally sustainable management of urban water supplies. The Central Coast community strongly supported water conservation as a demand side measure to meet future water needs of growing central coast region. Water conservation came out be Pillar 1 of CCWSP.

A Water Conservation Strategy is being developed to implement this pillar of the plan. About 80-90% of the strategy is complete and will be completed as the Strategy Lead Water Conservation role is filled. The strategy has followed the Water Efficiency Framework developed by the Department of Planning and Environment now part of Department of Climate Change, Energy, the Environment and Water (DCCEEW).a

#### Project Status

Options identification and evaluation metrics have progressed however, finalisation is dependent on the recruitment of the vacant Strategy Lead Water Conservation role.

### 1.3. Trial smart meters for top 100 large non-residential customers

Smart meters enable leak detection in real time, timely identification of high consumption patterns and an ability to notify customers, generate accurate consumption trends, improve customer relationship and increased revenue generation through improved meter reads. These are gaining traction in water utilities for the above-mentioned reasons. Over 600,000 smart meters have been installed in Australian water utilities.

The council water customer data analysis showed that about 100 large customers account for more than 50% of non-residential water usage. Some of these customers have multiple meters also. The customers that fall in this cohort use more than 10ML/year.

The proposal is to convert the existing customer meters into smart meters using a plug-in device and communication network. The data can be accessed through online cloud-based software.

### Project Status

" Taggle Systems" which is a market leader in Australia for smart metering was awarded a contract for providing and installing these devices. The Project is on track and the installation will be complete by end of March 2024.

- About 75% of the work of installation of devices is complete
- Aqualus, the platform for accessing the online data is operational
- Council is working with key customers to decide on threshold values for water leakage alerts.

### **1.4. Trial of Water RoadMap for large customers**

Council has not proactively promoted water conservation to large water use customers since the lifting of restrictions post the millennium drought in 2012. There is no specific tool or staff to serve large customers and promote water savings. There has been no follow up action with customers who developed Water Efficiency Management Plans (WEMPS) during the millennium drought.

Council has subscribed to Water Stewardship membership Asia Pacific (WSAP) and bought ten licences to explore the use of the Water Roadmap, its proprietary product. The Water RoadMap provides the customers with a strategic pathway towards improved water and wastewater management, addressing water security and water efficiency. The consultant ran a demonstration of the tool to the Water and Sewer management team for its water production business. The output report was prepared and circulated to identify gaps in our business processes.

### Project Status

Council has initially purchased 10 licences for the RoadMap and is facilitating delivery to 10 large non-residential customers. Council has already completed initial (benchmark) delivery of RoadMap for 9 customers:

- Trendpac
- Sanitarium
- Sanitarium on Meals
- Lendlease (Keyton)
- Ingham
- Cordina
- Sara Lee
- Mars
- CSR Hebel

The feedback from these customers was positive and they benefitted from the exercise. It has provided them with the opportunity to understand their water usage behaviour and use this

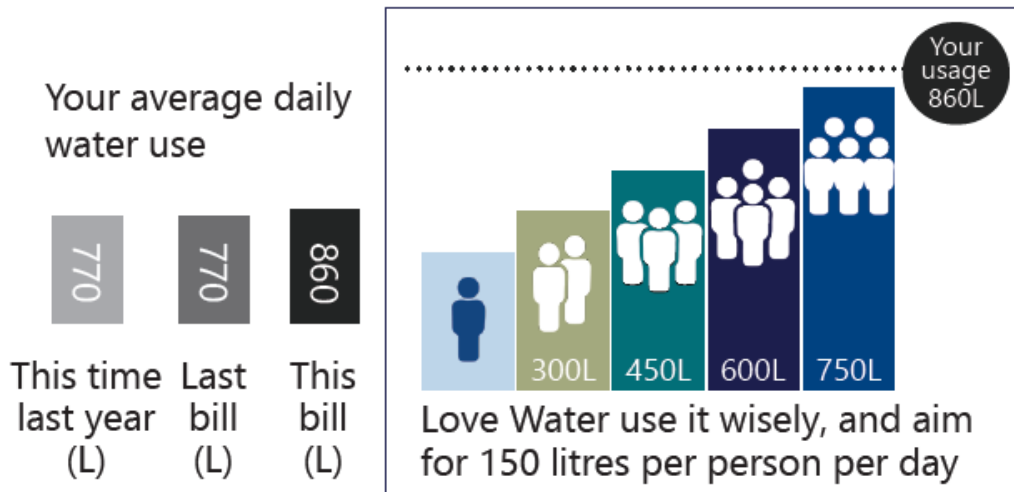
as a benchmark to monitor future course of actions identified. Two more rounds after 6 and 12 months will be undertaken to keep the momentum going.

WSAP are providing a further 10 licenses for the second batch of customers and providing an accredited facilitator to complete the midline work for the first batch and run the initial (benchmark) delivery for the second batch of 10 new customers. The work is proposed to be completed by 30 June 2024.

**1.5. Water Conservation Messaging in Customer Water Bill**

Council staff have identified that there is an opportunity for water conservation messaging through the customer water bill in addition to information provided by other channels. The proposed formatted customer water bill will have water usage figures plotted as bar chart with values labelled as below on the left. The right-side boxed graphics will show comparison with 'Water Wise Rules' target of 150 litres/per person per day. The visual depiction of usage rather than text is considered more impactful and will empower residential customers to proactively save water. The redesigned water bill is planned to start from July 2024.

**How do you compare?**



1.6.

**Department of Climate Change, Energy, the Environment and Water**

**Department of Planning & Environment Programs**

The Department of Planning and Environment (DPE) has now become a part of new department, Department of Climate Change, Energy, the Environment and Water (DCCEEW). The department is leading water conservation on several fronts and Council staff are participating in various programs and workshops to keep abreast of the state initiatives and leverage future opportunities that may become available.

Recent Milestones/Activities:

**Schools Program**

DCCEEW is designing water efficiency program for schools on the pattern of Victoria Government's, Schools Water Education Program (SWEP). Council's Water Education Officers are involved in the program and have provided list 20 schools with high per student water usage. The smart metering devices will be installed, and access provided to visualise the data. Most of the schools in the list are already included in the trial smart metering project.

Data sharing with third parties will be involved. Taggle Systems, Council's provider of 'Aqualus' system is in talks with the department to work this out.

### **1.7. Water Services Association of Australia (WSAA) Project**

Recent Milestones/Activities:

#### ***Water Efficiency Benchmarking (WEB)***

WSAA requested Expression of Interest from various water utilities to participate in this project. Our neighbor organisations, Hunter Water and Sydney Water are also participating in this project along with many other utilities.

The project will create a platform that provides clear and useful insights to inform businesses about water use and help non-residential customers and water utilities understand and improve water efficiency. This program aligns well with other projects council is doing in this space e.g., installing smart metering devices for large non-residential customers, Water RoadMap etc. Council has provided 'Expression of Interest' in the project. The Institute for Sustainable Futures (ISF) and BMT's Water Efficiency team are engaged by WSAA to lead this project which will kick off soon.

### **1.8. Active leak detection program**

Background

Leak Detection Project involves acoustic scanning of reticulation and trunk supply mains to detect leaks on various pipe materials including cement lined cast iron, asbestos cement, mild steel cement lined and PVC water mains.

The project will reduce operating costs associated with the supply of treated water to customers since the net overall volumes of water supplied via the distribution network will be reduced as leaks are progressively detected and repaired. Consequently, the cost recovery will also improve for water supplied to customers.

Central Coast Council operates a water distribution network comprising 2,019km of watermains up to DN450 and an additional 167km of trunk watermains up to DN1200 size.

## 2.4 Water Resilience Project Status Update (cont'd)

---

Further benefits of the Leakage Detection Project will identify longer term asset issues in the water distribution network and assist with targeted water main renewals to improve network reliability and decrease the age of network assets.

### Project Status

Ongoing

### Recent Milestones

- Fourteenth quarterly package of work completed. A length of 558km of potable water mains were acoustically scanned between mid-September & mid-December 2023.
- Fifteenth quarterly package of work commenced encompassing:
  - Wyong
  - Hamlyn Terrace
  - Long Jetty
  - Wamberal
  - Avoca Beach
  - Woy Woy
  - Ettalong Beach
  - Saratoga
  - Yattalunga
  - Point Clare
  - Tascott
  - Forresters Beach
  - Wyoming
  - Niagara Park
  - Davistown
  - Point Frederick
  - Gosford
  - Springfield
  - Mooney Mooney
  - Cheero Point
  - Kariong
  - Copacabana

- Hardys Bay
- Leak detection contractors are currently working in Niagara Park. Hamlyn Terrace and Long Jetty have been acoustically scanned in the current quarterly package of work and represent the first scan of these locations under the new program. The results from Hamlyn Terrace provide a baseline for relatively new infrastructure (less than 20 years old) composed of uPVC pipe material and indications are that leakage in this area will be caused by leaking hydrants, service lines, meters or customer supply leaks. Only one leak, a customer supply leak was detected in Hamlyn Terrace. The results obtained reflect the lower operating pressure in this part of the network and significantly younger asset age. Wyong continues to provide a good yield for leaks, which wasn't originally expected in the initial phase of the program. The latest results from December 2023 & January 2024 indicate a scanning frequency of the area every eight months is optimal. Wyong recently yielded a loss rate of approximately 2.2kL/km/day with a good range of leaks detected for eight months between acoustic scans. A previous elapsed time of ten months between scans resulted in the estimated loss rate increasing to 3.5kL/km/day.
- Approximately 1,882km of the Central Coast Council water supply network (for watermains less than or equal to 450mm diameter) has been scanned as of 21<sup>st</sup> January 2024.
- The current fifteenth quarter of leak detection work is for 528km of watermain.
- The estimated leakage rate per km of water main for each suburb is continuing to be used as a prioritisation technique to gain maximum benefit from the project.
- Estimated water losses identified to 15<sup>th</sup> December 2023 through leak detection prior to repairs being completed was 0.60ML/day for the fourteenth quarter of work. The estimated loss rate was 1.06kL/km/day based on 112 leaks detected.
- Lower numbers of leaks were detected in Wyoming and Terrigal for the fourteenth quarter of work. Estimated volumetric loss rates for leaks detected in these suburbs were also lower.

### Next Milestones

- Fifteenth quarter of work commenced from December 2023 and is continuing to progress.
- Data from customer calls reporting leaks is also being used for prioritisation. Locations will continue to be prioritised on recorded leakage data and frequency of watermain breaks per 100km.
- Recruitment and onboarding of additional Operations Engineer to assist the planning and implementation of shutdowns for subsequent repair work is still outstanding. Staff resourcing for Water and Sewer System Operations continues to be difficult.

### Forecast completion date

- Early-mid 2024 for the initial scan of the entire network.



## **2.4 Water Resilience Project Status Update (cont'd)**

---

- Currently 93% of the water supply network for watermains less than DN450 has been acoustically scanned at least once.
- Continue to target locations throughout the network based on historical leakage results, prioritising locations with high leakage rates.

## **2. Pillar 2 Maximise existing water supplies to delay new water supplies**

### **2.1. Overview**

Upgrades and refurbishment of existing, under-utilised surface water, recycled water and groundwater infrastructure can provide cost effective yield benefits before constructing new supplies.

Council outlined the key resources and activities required to maximise existing supplies within its Water Resilience Step Change Business Case in the 2021 IPART submission. The following roles are now planned to be recruited over the next 12 months to assist the program:

- Strategy Lead Water Resources Tarni Penn has started in this role in January 2023
- Senior Asset Planning Engineer Mano Jayasekara started in this role April 2023

### **2.2. Mardi Water Treatment Plant Stage 3 Upgrade (\$82.5M)**

#### Background

The Mardi Water Treatment Plant (MWTP) upgrade will secure up to 160ML/d nameplate treatment capacity at current treated water quality targets under contemporary raw water quality conditions, catering for peak day demand for the Central Coast now and into the future while also meeting inter-region transfer commitments.

Partial project funding obtained under the NSW Safe and Secure Water Program.

IPART Determination May 2022 found the project to be prudent but suggested opportunities to improve delivery efficiency which led to an Early Contractor Involvement (ECI) phase with the preferred tenderer in early 2023 and deferral of a portion of mechanical and electrical works to a future Stage 4 project, estimated in 2040.

Department of Planning and Environment (DPE) issued an approval under Section 292 of the Water Management Act for the project under the new framework on the basis of the preliminary design.

#### Project Status

- 90% detailed design phase is underway.

#### Recent Milestones

- Completion of the 50% detailed design phase

## **2.4 Water Resilience Project Status Update (cont'd)**

---

### Next Milestones

- Site establishment to commence in March 2024
- Excavation to commence late April 2024
- Extended Shutdown 1 to commence late April 2024
- Media and communications program to commence in March with a media milestone event at construction commencement.

### Scheduled completion date

- Late 2025

## **2.3. Mooney Dam Water Pump Station Upgrade (\$4.4M)**

### Background

Mooney Raw Water pumping station requires a capacity increase from 30ML/d to 60ML/d. The project objectives are as follows:

- Enable Southern Average Day Demand (ADD) to be taken solely from Upper Mooney Dam. This greatly simplifies treatment as raw water alkalinity is consistent (as compared to mixing Mangrove and Mooney water)
- Provide security of supply to the Southern area. If Mangrove creek pumping station fails, the current 30ML/d Mooney duty is not sufficient to supply the south on a peak day.
- Enhance the delivery capacity from Mooney Mooney Dam to the Somersby water treatment plant and to increase headworks yield by enabling water transfer from Lower Mangrove Weir to Mooney Mooney Dam during periods of surplus flow in Lower Mangrove Creek and low levels in Mooney Mooney Dam.
- Utilise Mooney Mooney Dam as the sole source for Southern ADD, simplifying the treatment process and ensuring consistent alkalinity by reducing the need for raw water mixing.

### Project Status

Construction funding request placed on hold while options phase is reassessed.

### Recent Milestones

Initial stakeholder project review workshop.

### Next Milestones

Project constructability and options confirmation.

## **2.4 Water Resilience Project Status Update (cont'd)**

---

Concept design for preferred option

Define and confirm procurement strategy

Detailed Design and delivery

Scheduled completion date

TBC post reassessment of options and concept design.

### **2.4. Recycled Water Scheme Review and Refurbishment**

#### Background

Council operates several sewage treatment plants (STPs) and stormwater capture systems, which potentially yield water for reclamation for a variety of applications. Council supplies recycled water to diverse users including residential customers, groundkeepers, holiday parks, mines and construction companies. This project is the preliminary review of the refurbishment of recycled water scheme (Phase 1). This was commissioned to review the Council's schemes to understand the current challenges, capacity, regulatory status and potential end users.

The major drivers for this project are to:

- understand the refurbishment/upgrade requirements to return the schemes to a fully operational status and obtain current regulatory approvals
- develop a prioritised strategy to identify where capital/operational investment into the existing reuse schemes provides the most value.

#### Project Status

The main investigation has been completed and, with Council input, the final report has been issued. Recommendations were reviewed by Council's Water Resilience Committee in July 2020. The report confirmed compliance issues in relation to end water quality for the recycled water schemes.

#### Previous Milestones

Completion of detailed water quality monitoring in 2022.

#### Next Milestones

Onboard new resources on recycled water scheme details.

Review of detailed water quality monitoring data and determination of upgrade/renewal requirements.

Request for tenders for 'Recycled Water Regulatory Gap Analysis - Toukley - Bateau Bay – Kincumber' is closing on 7/03/2024

Forecast completion date

## **2.4 Water Resilience Project Status Update (cont'd)**

---

This project was the preliminary review of the refurbishment of recycled water scheme (Phase 1) – completed July 2020

Scoping of Phase 2 was delayed which will commence by April 2024 with a Regulatory Gap Analysis - Toukley - Bateau Bay – Kincumber' which will carry over to 2024-25

### **2.5. Porters Creek Transfer System Readiness Assessment**

#### Background

Porters Creek Transfer Scheme (PCTS) was used as an additional water source during millennium drought, which was operational from 2006 to 2008. The PCTS involved transferring raw water from Porters Creek and pumping it to upstream of the Wyong River Weir for storage and treatment at Mardi Dam and Mardi Water Treatment Plant respectively. Porter Creek catchment is fast growing urban catchment and PCTS was installed just upstream of creek's merger with Wyong River. The system was installed as an emergency water supply under the Water Act 1912. The water license approval was only temporary, for a maximum period of 2 years.

Council adopted a Drought Management Plan (DMP) in 2020. The DMP was prepared in accordance with the NSW Government Best-Practice Management of Water Supply and Sewerage Guidelines (2007) which requires Local Water Utilities such as Council to have a sound Drought Management Plan in place and be ready to implement their plan when drought conditions arise. The DMP identified the PCTS as a historical water source that could be implemented during a future drought if required. The DMP identified the opportunity to re-examine the option but also highlighted the constraints that would need to be overcome. Central Coast Water Security Plan (CCWSP) also involves a drought response, developed to implement alternate water supplies quickly in the case of a drought emergency. One such action is to undertake a readiness assessment for the PCTS to ensure it is 'Plan Ready' in the event of a future drought. This includes seeking a water supply works approval and extraction license for the scheme and any amendments required to the Wyong River extraction rules.

#### Project Status

The project was kicked off 20 June 2023. The first draft of the stage 1 report was received which resulted in bringing forward some actions from stage 2 of the project due to the risk presented in determining the feasibility of the scheme in general. These items were the condition assessment of existing assets, the bridge and the pipeline and catchment risk assessment.

#### Recent Milestones

Detailed site survey and utility location survey, level 2 bridge inspection and catchment risk assessment has been completed. CCTV work for the gravity main component of the transfer main is being planned.

#### Next Milestones

To receive stage 1 final report by end of March 2024

Forecast completion date

September 2024

**3. Pillar 3 Develop new rainfall independent water supplies for an adaptive future**

**3.1. Drought Response Desalination Readiness Activities**

Background

Following the conclusion of the Drought Response Desalination Readiness Assessment, the recommendation to revise the originally proposed horizontal collection well intake structure in favour of a traditional direct ocean intake and to progress the project to a construction ready state is being pursued. To facilitate this, staff have commenced works associated with the additional studies and investigations necessary to formally request for a modification to the original planning Development Consent, to the NSW Department of Planning, Industry and Environment (DPIE). The project was on hold until recently due to high storage levels has been restarted again.

Project Status

Beca HunterH<sub>2</sub>O has been engaged as secondment style engagement to prepare detailed consultancy brief that covers the site selection and concept design for the proposed Central Coast desalination plant at Toukley.

Recent Milestones

The project was kicked off 10/12/2023. The initial task of setting up IT and RFI has been completed. The project will speed up from first week of March 2024 as project support resources increase.

Forecast completion date

Additional investigations that were identified as required to progress have an anticipated completion period of 3 years once the overall project is restarted.

Investigations scheduled to recommence FY2024/25.

**Link to Community Strategic Plan**

Theme 4: Responsible

**Goal H: Delivering essential infrastructure**

R-H4: Plan for adequate and sustainable infrastructure to meet future demand for transport, energy, telecommunications and a secure supply of drinking water.

**Risk Management**

This report outlines various demand and supply side measures to manage risks to regional water security.

**Options**

That the Committee notes the report.

**Attachments**

Nil