Technical Paper 2

Service levels

September 2025

Central Coast Council | Water and Sewer

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1 Key points

- The primary purpose of Central Coast Council's (Council) Water Utility is to provide consistent and reliable drinking water services in terms of quantity and quality. In addition, provide environmentally and socially responsible sewer services delivered in an economical and sustainable manner.
- Council operates within the legislative and compliance framework to deliver services according to Council's Water and Sewer Customer Charter and contractual obligations by developing policies, procedures, systems and mechanisms.
- Council ensures safe, reliable, and affordable services and quantifies its service output levels by a series of measures associated with quality, customer complaints, main breaks and failures, service interruptions and management.
- Council is actively pursuing customer-centricity by understanding the needs of the community and considering customers in all major decisions and actions.
- Council recognises water as a precious resource and continues to undertake water conservation measures.

2 Service levels in current pricing period

2.1 Background

Central Coast Council (Council) is unique in that its water and sewer services are legislated by the *Local Government Act 1993* (LG Act); however, prices are regulated by the *Independent Pricing and Regulatory Tribunal (IPART) Act 1992*.

Unlike other Local Water Utilities, Council, when setting prices does not reference the Department of Planning and Environment (DPE) "Best Practice Management of Water Supply and Sewerage Guidelines". Council is legislated to reference IPART's regulatory framework. Council is the only local water utility where pricing and developer charges are regulated by IPART. Council only needs to demonstrate compliance with the liquid trade waste policy and approvals component of DPE's criterion.

As a means of evaluating Council's service level efficiency, this paper provides an overview of performance indicators in the current determination (2022-26) by comparing them to other medium, large and major utilities in New South Wales. It also provides a narrative around Council's performance and provides explanation and ongoing activities regarding performance.

National Performance Reports (NPR) benchmark the pricing and service quality of Australian water utilities. Indicators include water resource supply and usage, financial operations, bills and pricing, assets, water quality compliance, and customer performance. These reports support commitments under the National Water Initiative (NWI) and are published annually and prepared independently by the Bureau of Meteorology (BOM), State and Territory Governments and the Water Services Association of Australia (WSAA).

This technical paper highlights Council's performance against other utilities, this includes:

- Water quality complaints per 1,000 properties
- Unplanned interruptions per 1,000 properties
- Water main breaks per 100 km of main
- Average duration of water outages
- Sewer main breaks and chokes per 100 km of mains
- Water losses per litres per service connection per day (no target set by regulators).

Council reports both quarterly and annually on its website on its progress, achievements, and challenges in alignment with commitments made to our community. These reports can be found in the following link:

https://www.centralcoast.nsw.gov.au/residents/water-and-sewer/about-water-and-sewer-services/water-and-sewer-performance-reports-and-delivery-plan

Beginning in 2023, Council conducted several community engagement activities to determine what our community values in relation to its services. These values and outcomes are highlighted below (refer to Figure 1, Table 1 and Table 2).

Figure 1: Community values

Table 1: Community values – Water

Water – Values and Outcomes					
Good quality water	**Reliable service**	**Affordable**	**Effective planning**	**Environment**	**Transparency**
Clean, clear, and safe drinking water drinking water	Consistent water supply available to everyone. Good water pressure	Cost efficient - keeping costs as low as possible for customers	Having enough water for increased population	Protecting the natural environment within catchment areas	Providing clear, easy to understand information and good communication
Good taste and smell	Well maintained network, reducing leaks	Consistent bills over time (predictable)	Using variety of sources for non-drinking purposes, and to deal with varied climate conditions e.g., recycled water, stormwater capture		
Water content is tested/monitored regularly. E.g., chlorine levels	Responding to faults and issues quickly	Fair allocation of costs between customers	Collecting and reusing more water at household level e.g., rainwater tank/use for greywater		

Table 2: Community values – Sewer

Sewer – Values and Outcomes					
Quality treatment	**Reliable service**	**Affordable**	**Effective planning**	**Environment**	**Transparency**
No health impacts on customers or workers	Minimal overflows, broken pipes responding quickly to issues	Cost efficient-keeping costs as low as possible for customers	Long term planning to ensure the sewerage service is sufficient for future needs	Protecting the oceans and marine life	Providing clear, easy to understand information and good communication
Suitable effluent quality	Suitable infrastructure is well maintained	Fair allocation of costs between customers	Using the latest technology/innovations/learning from other countries e.g., recycled water	Using renewable power for treatment plants	Raising community awareness - what to put down the toilet, implications of not doing this, what happens to waste
Minimal odours			Adaption to climate change	Greater use of biosolids	Transparent pricing and costs - what the service fee is made up of
					Easier accessible water safety ratings for beaches and recreation areas
					Greater public truth that council has the expertise and resources needed to deliver on its promises

2.2 Revenue invested in community values

Over the current determination period (2022-2026), the revenue collected from bills will be invested in capital works (42%) and operations (58%). The revenue is based on the average bill of $1514[1] (2024-25) per annum. The operational and capital expenditure activities to address community values are in the current determination, and are highlighted below, with percentage allocation shown in Figure 2.

Effective planning – costs associated with the development of the Central Coast Water Security Plan (CCWSP), water conservation, resilience and sustainability strategies, water demand forecasting, development assessments, asset strategies, planning and delivery, asset maintenance schedules and construction of major works.

Environmental – compliance with licence obligations at Council's ocean outfalls NSW Environment Protection Authority (EPA) Environment Protection Licences (EPL), weed management in catchment areas, protecting Aboriginal sites, protection of endangered species, management of fish weirs, monitoring water quality in our catchments for PFAS[2] and other chemicals, checking rivers for giardia and blue green algae and waterway health, management of bushfire prone lands around our critical assets and maintenance of asset protection zones. Also includes environmental assessments for capital works and emissions monitoring at the Sewage Treatment Plants (STP).

Reliable service – maintaining assets related to the transport of water to and from the Water Treatment Plants (WTP) to the property and sewage removal from the property to the STPs. This includes:

- Monitoring of critical assets 24 hours a day, seven days a week
- Immediate response to urgent incidents (as defined in Council's Customer Charter)
- Operational costs associated with sewage pump stations, low pressure systems, effluent mains, sewage mains, vacuum pots, water pump stations, water mains (including raw water assets), chlorination stations, reservoirs, service lines and water meters (some costs associated with reliable services are related to environmental costs that are often associated with sewer overflows). These costs include electricity, labour, materials, plant and fleet, contractor, and labour costs for both reactive and preventative maintenance.
- Capital investment in pump stations, reservoirs, treatment plants, reticulation mains upgrades as well as telemetry.

Quality water – the capital costs associated with improving water treatment at both Somersby and Mardi WTPs. It extends from water catchments to delivery and includes the water storage at the dams of Mangrove, Upper and Lower Mooney, and Mardi. In addition, monitoring water quality in the water lifecycle, laboratory costs associated with sampling and

[1] Based on household using 180kL water usage

[2] PFAS – polyfluoroalkyl a group of man-made chemicals.

compliance and water dosing practices. It includes costs associated with chemicals, materials, energy, plant and fleet, contractor costs and labour.

Quality treatment – the costs associated with the treatment of sewage at Council's STPs at Charmhaven, Gwandalan, Mannering Park, Toukley, Wyong South, Bateau Bay, Kincumber, and Woy Woy. It includes the costs associated with chemical, materials, energy (to run the facilities), labour, contractor costs and biosolids removal. Capital investment at Bateau Bay STP, sludge lagoon refurbishment at Toukley STP, aerator replacement at Woy Woy STP and sludge mechanical dewatering renewal at Kincumber STP.

Administration – costs associated with support activities including costs associated with business performance, regulatory reporting, compliance and IPART monitoring.

Support services – costs associated with Council's support services including customer service, fleet management, financial and legal, human resources, communication, engagement, information technology and depot services.

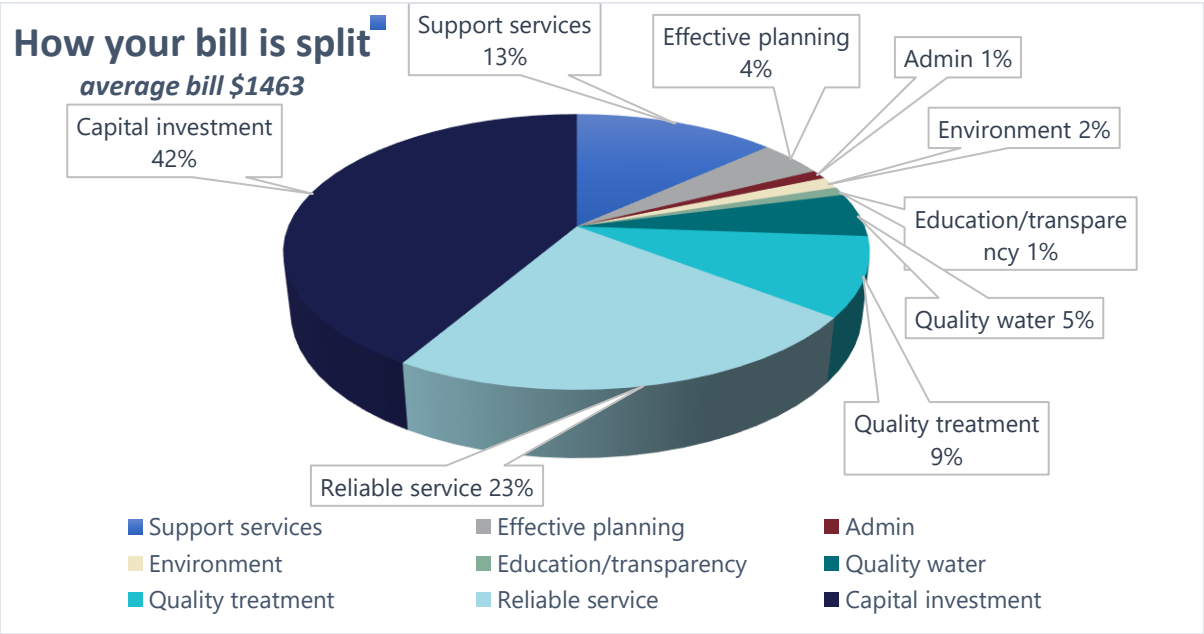


Figure 2: Shows the percentage of revenue collected and how it is split to align with customer/community values

As part of Council's engagement, our community was asked for their thoughts on Council's current performance targets that were previously set by IPART.

In general, the community agreed that there should be a continuous improvement towards meeting the current performance metrics, with everyone agreeing that performance against wastewater breaks, chokes, and overflows should be improved. However, in addition to this feedback, the community expressed little appetite for increasing bills to reduce these targets apart from water quality. There is no target set for 'Average duration of unplanned interruptions' as the community did not raise this an issue of concern. Community preference was to focus on affordability. The summary of the engagement is shown below in Table 3.

Table 3: Current and future performance targets

Performance item	Current performance target	Community feedback	Local Water Utility performance reporting 2023-24	Annualised performance 2024-25 (May 2025)
Number of unplanned water interruptions per 1,000 properties	115	Satisfied with current target. 67% satisfied (North) 33% to lower (North) 100% satisfied (South)	State average 60 per 1,000 properties	123 per 1,000 properties
Average duration of unplanned interruptions	No target set	No comment	State average 145 minutes	179 minutes
Number of water quality complaints per 1,000 properties	7	Community agreed target to be lowered no specific target set	State average 3.29 per 1,000 properties	4.0 per 1,000 properties Council's new target 5
Number of wastewater overflows per 100 km main	26	No target stated but agreed to be lowered and performance improve regarding future planning	State average 33 per 100 km of main	28.6 per 100 km main
Number of wastewater overflows reported to EPA per 100 km main	1.3	North group to report all overflows to EPA[3].	No State averages provided	2.3 per 100 km main
Number of wastewater main breaks and chokes per 100 km	30	No target stated but agreed to be lowered and performance improve regarding future planning	State average 33 per 100 km of main (NPR 2023-24)	36.5 per 100 km of main
Number of water main breaks per 100 km main	14	No target stated but agreed to be lowered and performance improve regarding future planning	State average 10 per 100 km main	14.1 per 100 km main

Using the National Performance Reporting (NPR), Council conducted analysis against other minor, large, and major water utilities against key performance metrics, these are shown in Figure 3.

[3] *Protection of the Environment Operations Act* (1997) requires that pollution incidents must be reported to NSW EPA where there is actual or potential material harm to ecosystems or health and safety of human beings that is not trivial, or if the pollution incident results in actual or potential loss or property damage of aggregate cost exceeding $10,000.

3 How does Council compare with other water utilities?

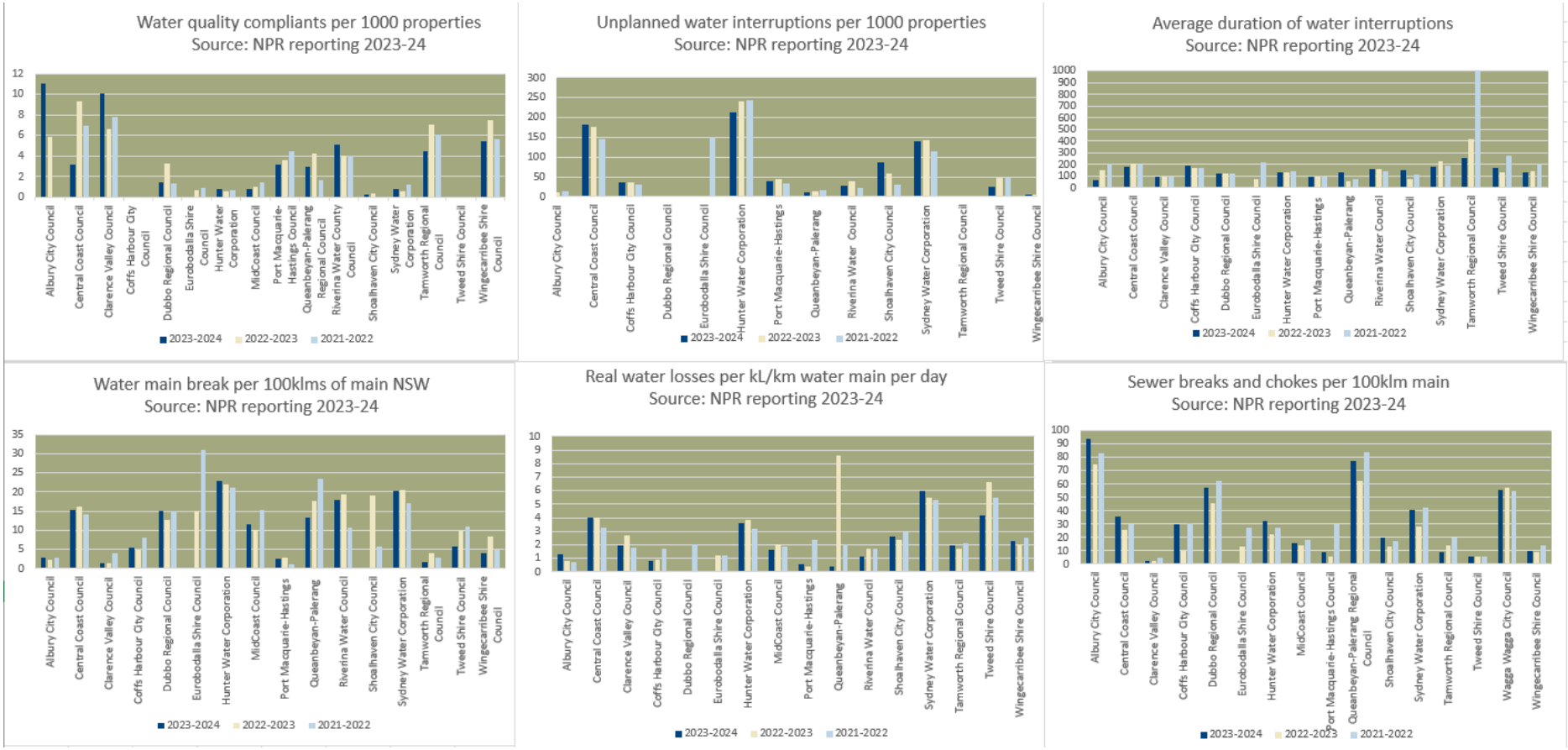


Figure 3: NPR comparisons against key performance indicators 2023-24 (last complete dataset)

4 Council's performance

4.1 Responding to our customers' requests for service

Council monitors how we respond to issues reported to us, by our customers. When issues are raised by our customers, they are categorised into urgent and non-urgent according to a matrix that assesses risk and impacts of the issue being reported.

Urgent issues include sewer chokes, sewer surcharges and overflows, water main breaks or potential environmental damage. We have committed to respond to urgent issues within one day. Please see Figure 4 for our performance results.

Non-urgent issues may include low water pressure, slow leaks or damaged water meters. Council's target is to respond to these lower priority issues within five days. Please see Figure 5 for our performance results.

Often, Council's response to issues reported can be impacted by weather or significant storm events.

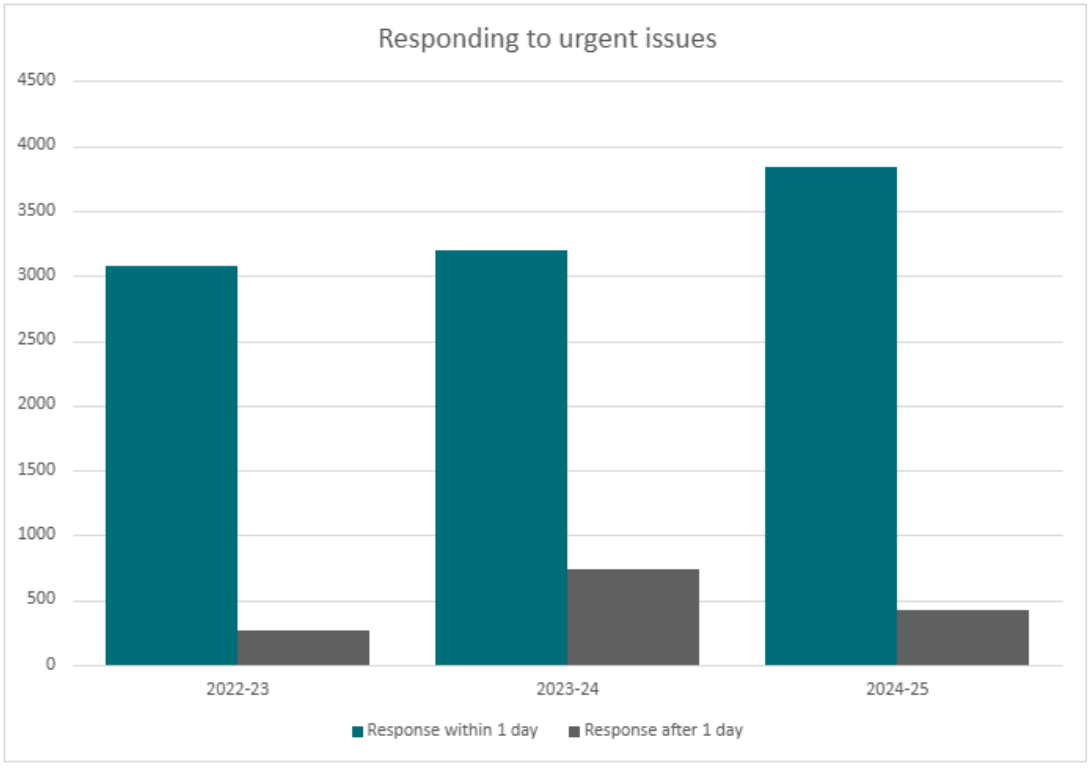


Figure 4: Responding to urgent issues within one day

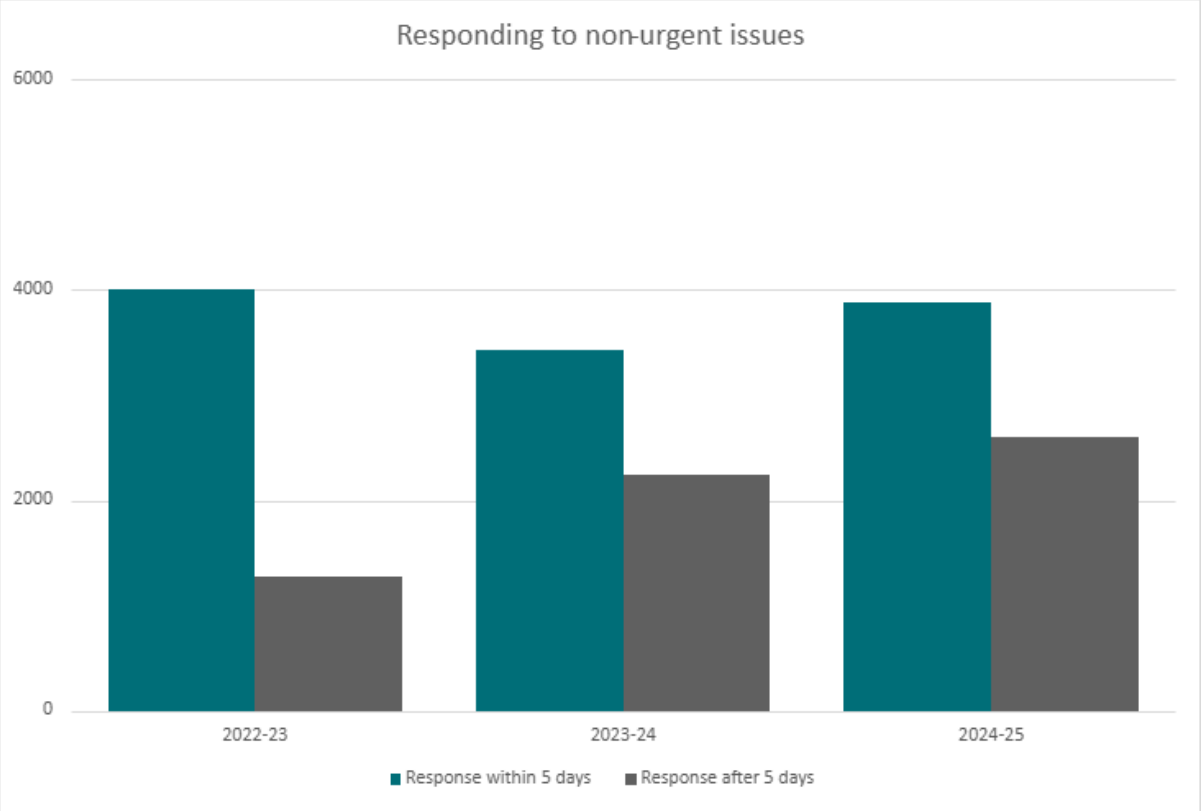


Figure 5: Responding to non-urgent issues within five days

4.2 Quality treatment of water – water quality complaints per 1,000 properties

Quality treatment of water starts in the catchment areas and extends to storage, treatment and transport to our customers. Collection of raw water from our catchments is often impacted by rain and storm events which present challenges for the treatment processes. Water produced by the treatment processes must comply with the Australian Water Drinking Guidelines (ADWG).

Water quality complaints are captured at the point of customer contact for initial operational consideration and response, then collated to monitor trends in complaint volume, type and location to better understand customer satisfaction with the drinking water services provided.

The trend in water quality complaints per 1,000 properties has been improving since late 2023. At May 2025, Council had received 4.0 water quality complaints per 1,000 properties (annualised). The average for water utilities that are in the medium, large and major categories is 3.29 per 1,000 properties. This result is within the adopted performance target of 7.0 water quality complaints per 1,000 properties and is approaching the NSW average of 3.29 water quality complaints per 1,000 properties for medium, large and major sized local water utilities. Please refer to Figure 6.

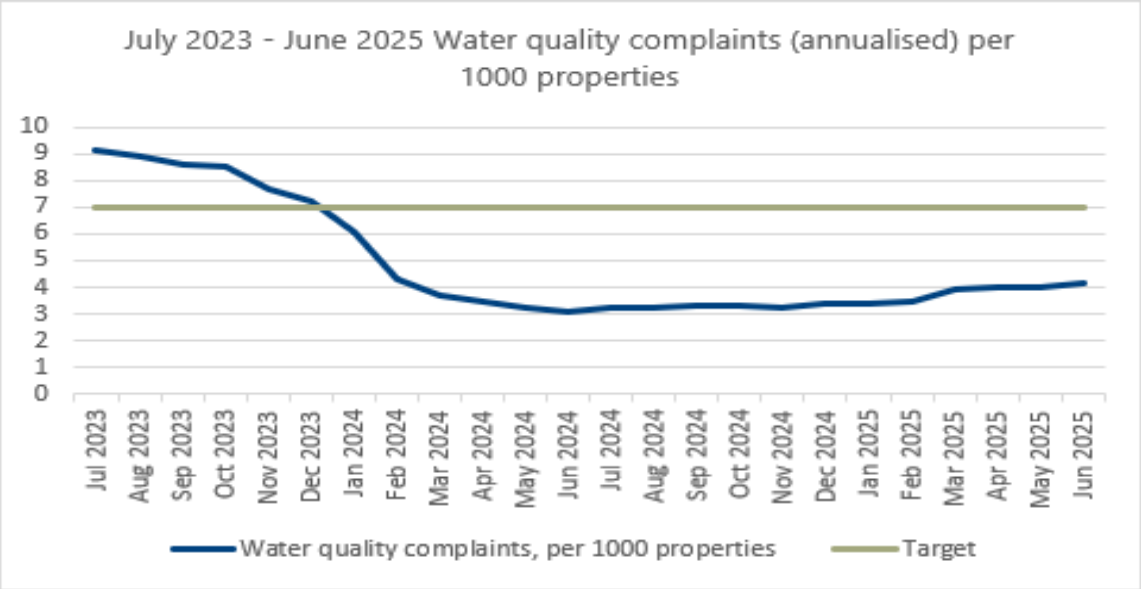


Figure 6: Water quality complaints (annualised) per 1,000 properties 2023-2025

4.2.1 Operational

- Council's reservoir structures are internally cleaned on a rotational basis. This is done both manually for steel structures and with the use of divers for predominantly concrete structures. In the current determination period (2022-26) Council has/intends to clean 63 reservoirs. For the 2026-31 determination period, Council is scheduled to clean 93 reservoirs. The use of contract divers includes a structural assessment report of the condition of the structure related to internal walls and leaks.
- An increase in the length of mains cleaned using closed loop filter cleaning. This increased from 63km in 2022-23 to 103km in 2024-25. Closed loop cleaning (No-des cleaning) areas are selected based on a heat map of annual discoloured water complaints. Each year around 100 km is selected based on the complaints. Please refer to Figure 7.

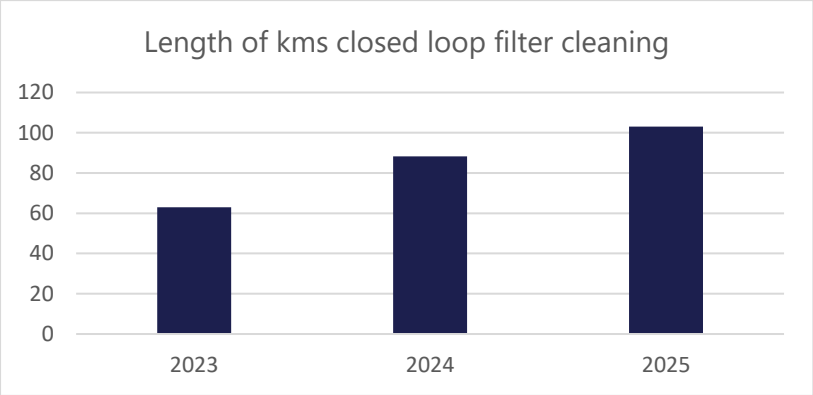


Figure 7: Length of mains cleaning 2023-2025FY

- An increase in water main hydrant flushing from 1,420km in 2022 to 2,074km in 2024 (refer Figure 8).

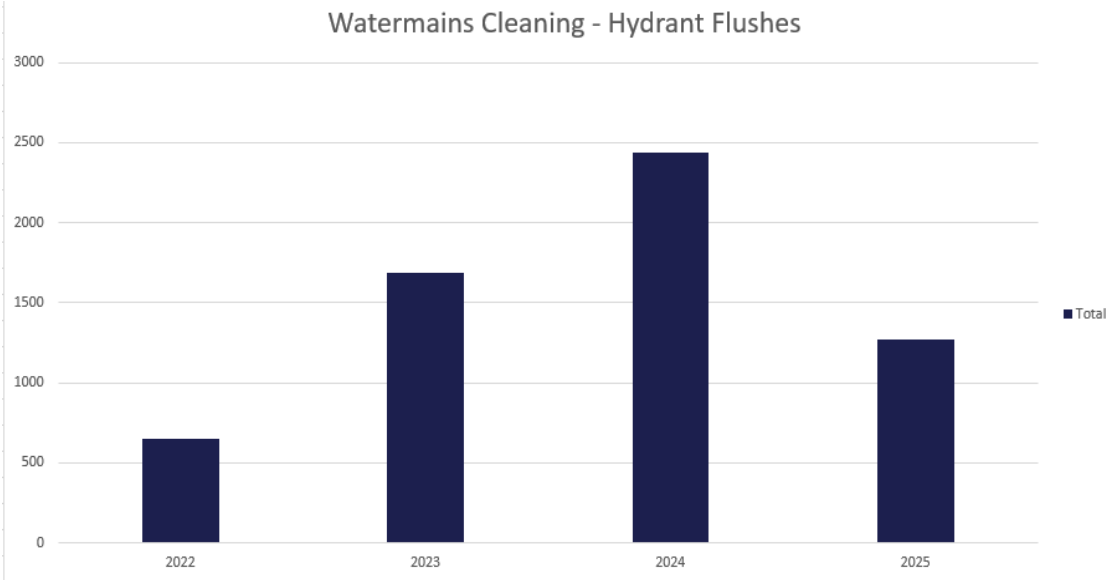


Figure 8: Hydrant flushing 2022-25FY (note 2025 low due to report timing)

- An increase in chlorine (taste) complaints received have been addressed by regular network maintenance such as the additional flushing and closed loop filter programs, to reduce the chlorine demand to disinfect the drinking water[4].
- The rollout of a new application in the field that allows "live" monitoring of water sampling for chlorine levels enable immediate chlorine adjustment, as required.

4.2.2 Capital Works Program

- **Somersby Water Treatment Plant** – project to improve reliability and efficiency of plant in preparation for Mardi Water Treatment Plant (MWTP) upgrade.
- **Mardi WTP upgrade** – completion of the upgrade will establish Mardi WTP as the principal drinking water supply for the Central Coast, securing 160ML/day treatment capacity, catering for peak day demand. The upgrade also allows increased flexibility for Council to manage water quality issues within its distribution network through the improvement of chlorine persistence and the reduction of disinfection by-product formation at the treatment plant, allowing more potential for re-chlorination as required within the distribution network.
- **Water main reticulation work** – replacement of water mains, in particular removal of dead ends throughout the network, assisting in water quality across the higher impacted areas.

4.2.3 Compliance with the Drinking Water Management System

Council is required to provide safe drinking water in accordance with the NSW *Public Health Act 2010*, the NSW *Public Health Regulation 2022*, *Fluoridation of Public Water Supplies Act 1957*, and *Fluoridation of Public Water Supplies Regulation 2017*.

A key requirement for drinking water suppliers is compliance with a quality assurance program in the form of a Drinking Water Management System (DWMS).

A Drinking Water Management System consists of documents, procedures, and other supporting information for the safe supply of drinking water. The DWMS must address the elements of the Framework for Management of Drinking Water Quality as set out in the Australian Drinking Water Guidelines (ADWG) relevant to the operations of the supplier. At the heart of the ADWG are Critical Control Points (CCPs) - activities, procedures or processes critical to controlling a water quality hazard (for example chlorination and filtration/particle removal).

Council maintains a catchment-to-tap water quality verification program, with CCPs established at critical barriers in the drinking water supply system to identify and take management actions to protect the health of customers. In addition to the internal water quality monitoring program, IPART established water quality output measures of 100% compliance with ADWG for microbial and chemical health guideline values within the previous determination period (2019-2022). Please refer to Table 4.

Table 4: % Compliance with ADWG microbial and chemical health guideline values

Period	% Compliance ADWG microbial guideline values	% Compliance ADWG chemical guideline values
2024/25	100	100
2023/24	100	100
2022/23	100	100

Overall, the results of the drinking water monitoring and verification programs demonstrate that Council continues to deliver safe drinking water to customers. Further information on Council's drinking water catchment, treatment and supply is provided in Technical Paper 10.

[4] Chlorine is used in drinking water to kill pathogenic micro-organisms.

4.3 Reliable service – water service interruptions per 1,000 properties

Unplanned water service interruptions occur when the water is isolated/stopped to address water mains break or other system issues associated with the water main. Causes of water mains breaks can be the age and construction of the pipe, shifting or constricting soil, or third-party damage.

Over the current determination (2022-2026), the number of unplanned water service interruptions per 1,000 properties (annualised) has reduced from 211 (January 2024) unplanned interruptions to 122 (April 2025) refer Figure 10. It is however above the NSW average of 60 per 1,000 properties for medium, large and major water utilities.

Council replaces ageing and poor performing water mains with the water main renewal project. The determination of renewing a water main is based on the following assessment criteria:

- Age of the asset
- Risk of failure
- Number of times a main has failed within a 12-month period
- Consequence of failure – includes impact of failure on the environment and property damage.

Over the current determination (2022-2026), Council has renewed 11.3 kilometres of water main.

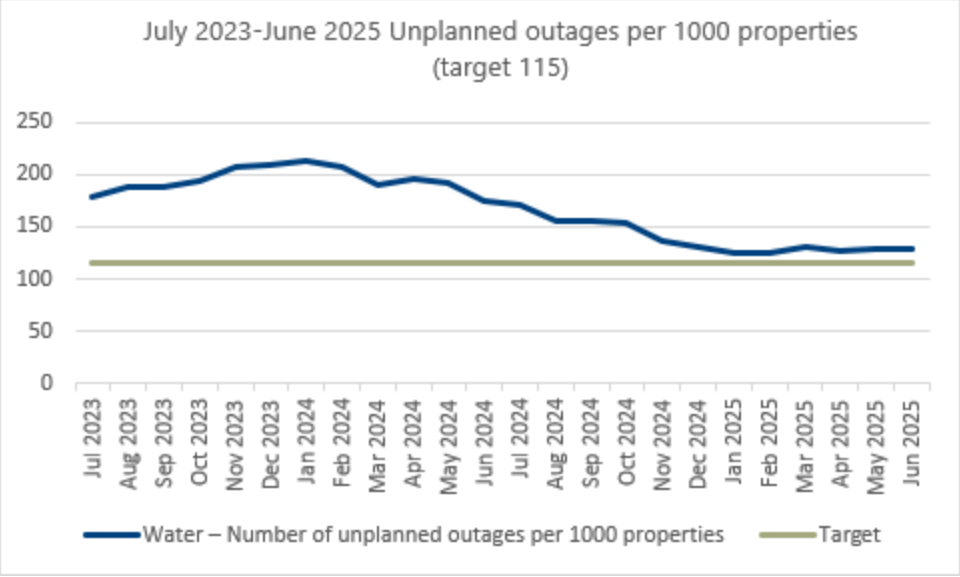


Figure 9: Unplanned water supply outages 2023-25

An associated performance measure is the average duration of unplanned water interruptions (minutes). Performance monitoring data collated for Local Water Utilities (LWU) reports that the average for medium, large and major utilities in 2023-24 was 146 minutes. Council is above the average with an annualised average duration of unplanned water interruption of 178 minutes.

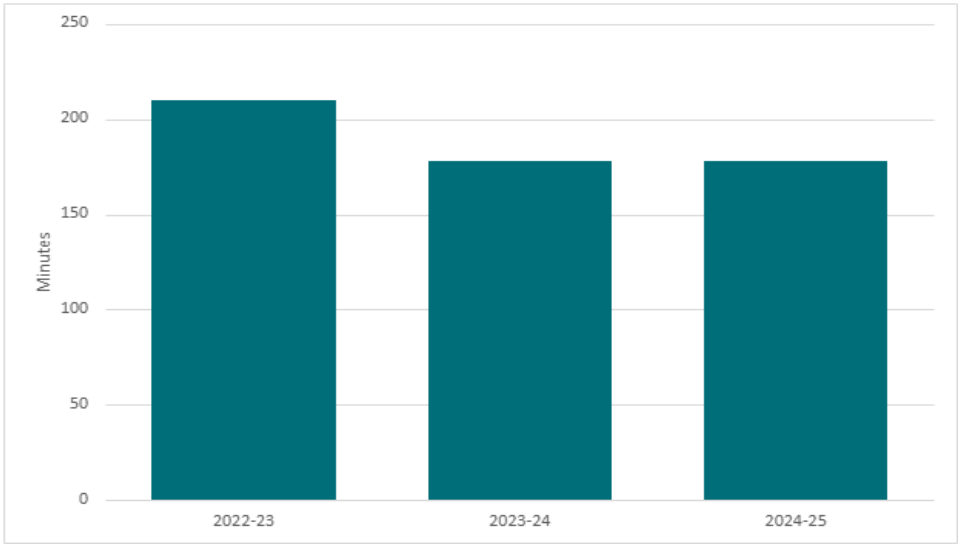


Figure 10: Average duration of unplanned water interruptions 2023-2025FY

4.3.1 Operational

Operational maintenance is related to reactive maintenance (emergency repairs identified by community or SCADA[5] alarms), preventative maintenance (programmed inspection and maintenance activities) or interruptions that can be associated with the need to isolate a main due to a capital works project. During the current determination period, Council has implemented the following:

- Analyse service failure patterns to inform preventative maintenance schedules.
- Increase in hydrant[6], valve[7] and tapping band[8] maintenance to both detect and fix leakages.
- Trialling the use of S-Gate valves has been completed (refer figure 11). This new technology reduces the radius of properties impacted when a main needs to be isolated. In addition, it has the capacity of reducing water lost by 50,000 litres per job. It also allows installation without having to isolate the water main.

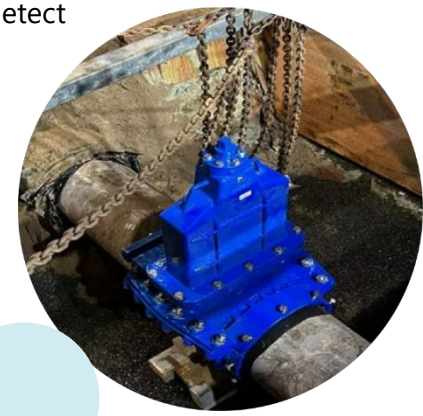


Figure 11: S-Gate valve being installed

[5] SCADA – Supervisory Control and Data Acquisition. It is system that monitors water systems, providing real time data and remote capabilities.

[6] A hydrant is attached to a water main and mainly used accessing water predominantly used for firefighting. It can also be used to place water into the main to clean the pipe and water post a main break.

[7] A valve is used to isolate water if a main needs to be replaced or fixed.

[8] A tapping band allows the connection of service lines to the mains.

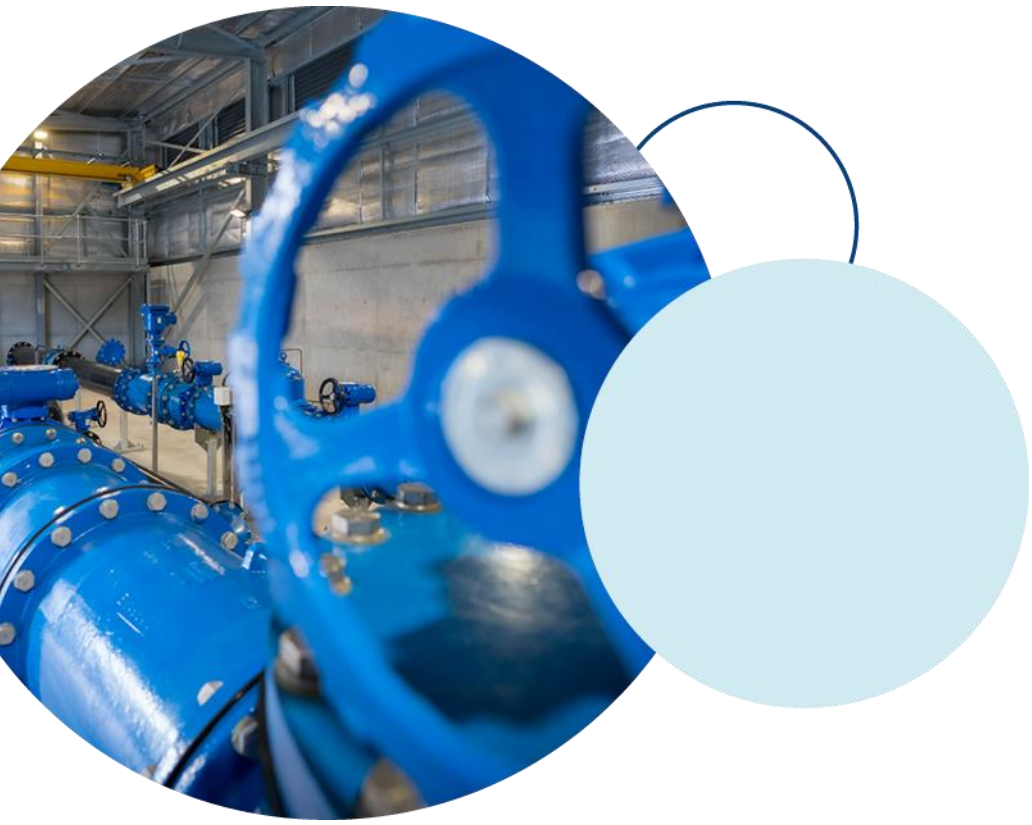
4.3.2 Capital Works Program

Renewal of water mains are subject to assessment based on:

- Age of the asset
- Risk of failure
- Number of times main has failed within a 12-month period
- Consequence of failure – includes impact of failure on the environment and property damage
- Minimising disruptions assists in the improvement of water quality and reliability.

A snapshot of the capital expenditure to address unplanned outages includes:

- Water Trunk Main Installation – Mardi to Warnervale
- Water Pumping Station Kiosk Replacement – Brooke Avenue, Killarney Vale
- Water Infrastructure Reinforcements – Gosford Central Business District
- Water Pump Station Refurbishment – Central Coast Highway, Forresters Beach
- Water Valve Renewals – region-wide
- Water Pump Station Upgrade – Wards Hill Road, Killcare Heights
- Water Reservoir Minor Asset Renewal Program – region-wide
- Water Treatment Plant Trunk Mains to Clear Water Tank Upgrades – Mardi.



4.4 Reliable service – leak detection (water losses)

Leaking water mains continue to be monitored and assessed regularly as it forms part of the Central Coast Council Water Conservation Strategy. Council uses information provided by Water Services Association of Australia (WSAA) to estimate how much water is lost each year. This is done by comparing the total volume of water extracted from various sources against the total volume of water supplied to the customers.

A new leak detection contract commenced in July 2024 and to date has scanned 1,614 km of water mains, detecting 391 leaks in the system which is estimated to reduce water loss by 623 ML/year. The aim of the program is to find leaks using an acoustic scanning technology. Annually, Council intends to scan 2,000-2,200 km of water mains. The locations selected for investigation are based on historical and ongoing leakage data. Please refer to Figure 13.

Pressure management is also a fundamental strategy to leakage control. It is a proactive operational strategy that involves optimisation of network pressure to reduce excessive or fluctuating pressure. This is typically achieved using pressure reducing valves (PRVs) at strategic locations. Pressure management has following advantages:

- Extend asset life by reducing stress on pipes, joints, valves, and fittings. This contributes to longer lifespan of infrastructure and reduces long-term maintenance cost.
- Conserve water by reducing real water losses ensuring sustainable and efficient water supply operations.

Figure 12: Water main scanning for leaks

Leak detection dogs aren't a regular water leak detection method, however, Council recently used the services of leak detection dogs from Sydney Water. Leak detection dogs are a proven technique for proactively detecting water and sewer leaks that have not yet permeated to the surface. Council use them on an ad hoc basis, mainly identifying leaks in sewer rising mains.

https://www.centralcoast.nsw.gov.au/council/council-news/detection-dogs-helping-save-water-sniffing-out-leaks-across-coast

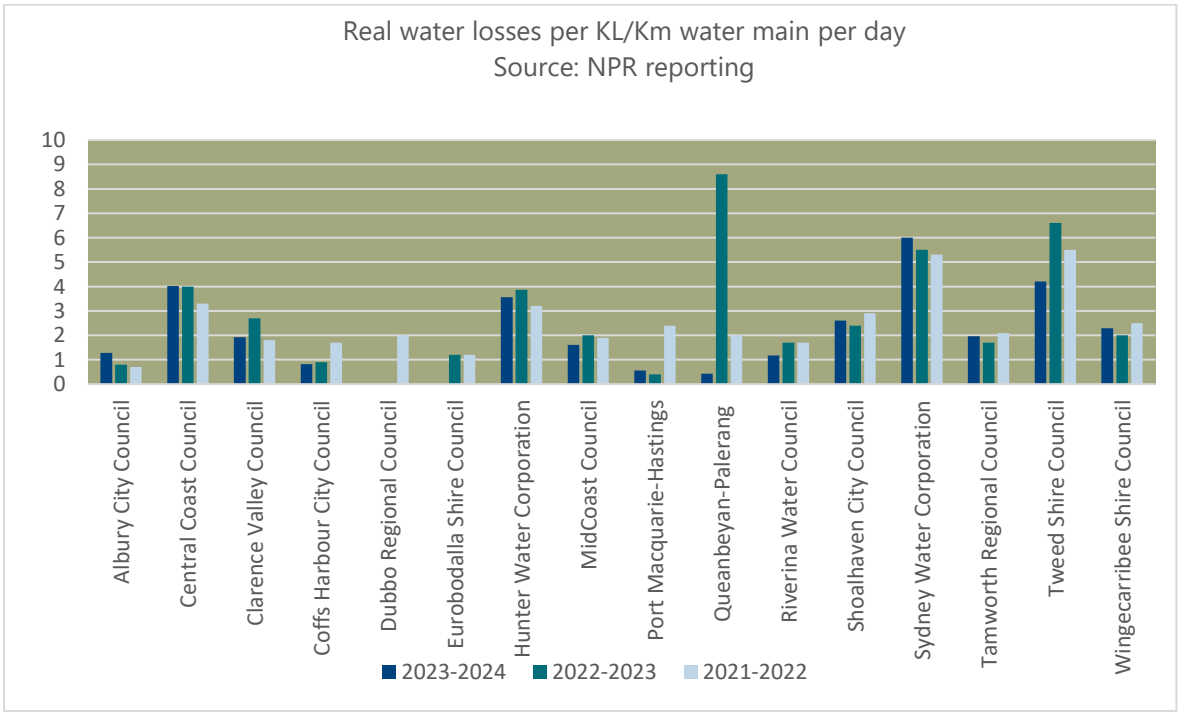


Figure 13: Water losses per kL/km water main per day

4.5 Reliable service – water main breaks per 100 km main

Water main breaks can occur in Council's drinking water reticulation network due to the age of the pipe, ground movement due to seasonal variances (for e.g., heavy rainfall, cold weather soil constriction) or often damage caused by third parties.

Council continues to improve the number of water main breaks per 100 km of main reducing the occurances from 18/100 km of main in April 2024 to 14.76/100 km of main in March 2025. The average for medium, large and major utilities is 10 (NPR 2023-24). Please refer to Figure 14.

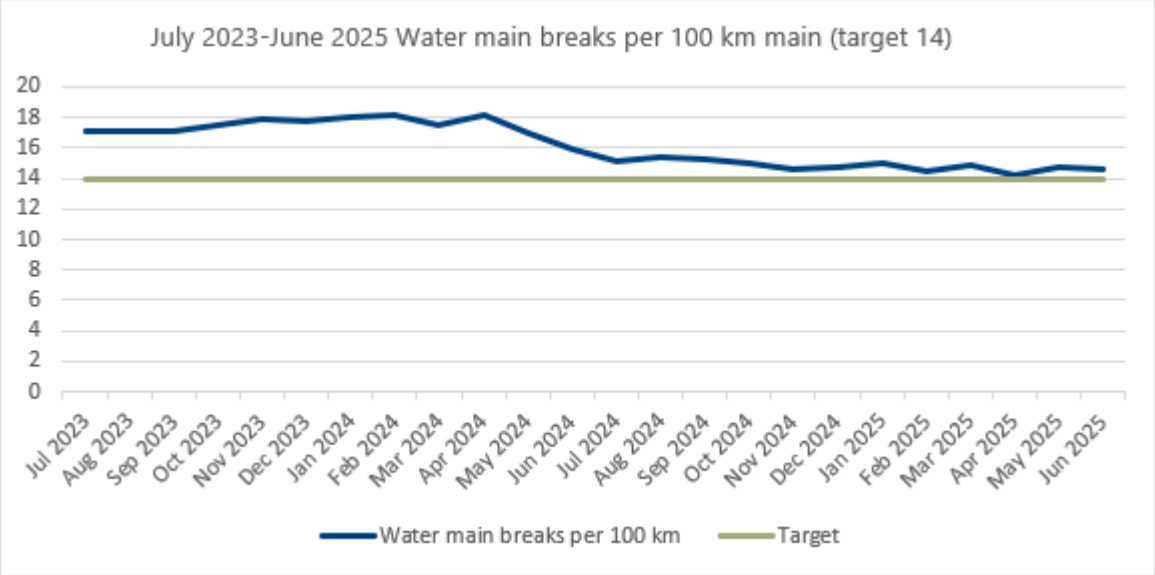


Figure 14: Water main breaks per 100 km main

4.5.1 Operational

Council continues to be innovative with improving performance. The following activities are included in operational maintenance:

- Introducing a pressure main criticality assessment to guide the renewal of priority mains
- Reviewing maintenance decisions to understand planned versus unplanned hydrant maintenance and isolation points for unplanned water service repairs
- Reviewing tapping band/main tap[9] and service failure locations and host pipe materials to understand overlap with renewal program
- Continue with leak detection scanning (as above)
- Using geospatial technology to map incidents and produce 'heat maps' to identify priority locations for mains monitoring.

[9] Tapping band/main tap - a pipe fitting used to create a branch connection onto an existing pipe without cutting into it entirely. It allows for the connection of a new pipeline or fitting (like a valve or sprinkler) to an existing pressurized pipeline.

4.5.2 Capital Works Program

Council continues to progress the water main renewal program to improve asset performance and build resilient infrastructure:

- Water Main Renewal Program – region-wide
- Water Trunk Main Renewal – Avoca Lagoon
- Water Main and Culvert Replacement – Day Street, Wyoming
- Water Main Critical Extensions and Renewal Program – region-wide
- Water Main Relocation Program – Infrastructure Upgrades – region-wide.

4.6 Reliable service – sewer chokes and breaks per 100 km main

In terms of protecting the environment and public health associated with sewage collection, transport, treatment and disposal, Council is obliged to comply with both the EPA and the Central Coast community.

Council operates its sewerage network in accordance with the conditions of relevant EPLs, including restrictions on the discharge of untreated or partially treated sewage from the reticulation system.

The cause of sewer main breaks or blockages leading to overflows can commonly be attributed to a range of reasons, including:

- Shifting soil
- Growth of tree roots (especially in dry weather where trees seek moisture)
- Blockages due to fats and foreign materials
- Use of heavy equipment above ground
- Corrosion of metallic pipes
- Third party damage.

The average chokes and sewer main breaks for medium, large, and major is 33, with Council trending at 38 (refer Figure 15).

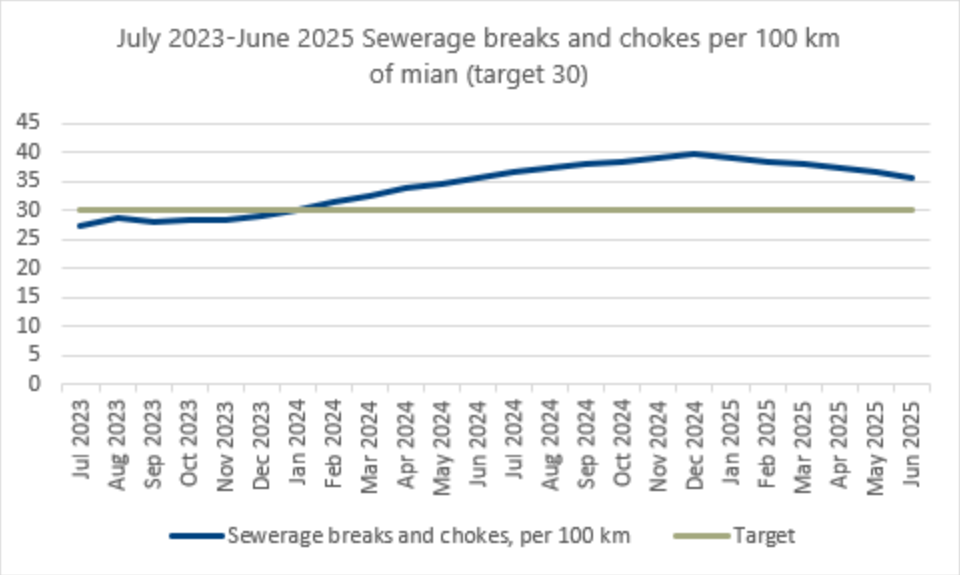


Figure 15: Sewer main breaks and chokes per 100 km main

Sewer system overflows may occur occasionally, even in well-designed systems that collect and transfer sewage. Sewage overflows have the potential to cause significant environmental harm, public health risk and a lack of confidence in Council's ability to serve and meet public expectations (refer Figure 16).

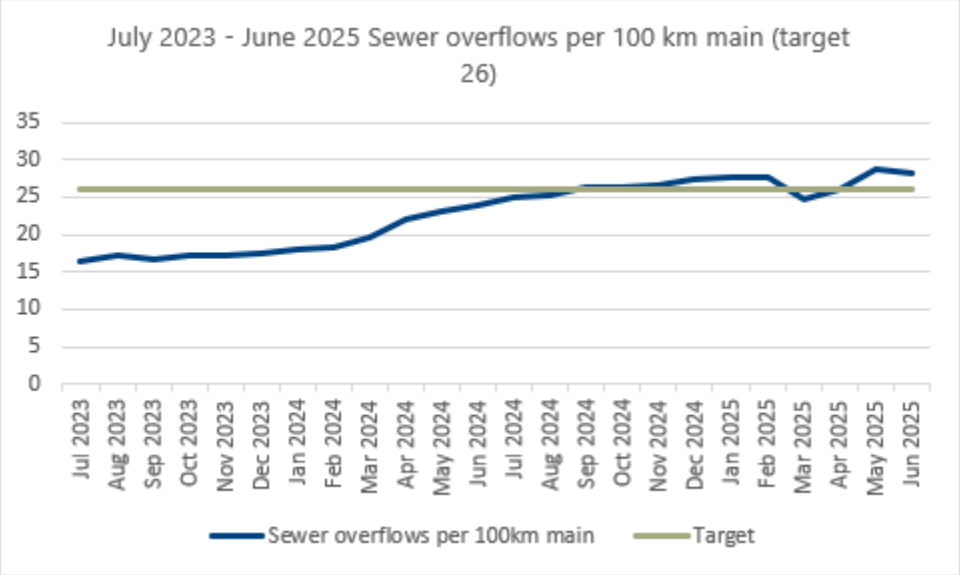


Figure 16: Sewer overflows per 100 km main

Pollution incidents must be reported to the EPA and other relevant authorities (including Fire and Rescue NSW, NSW Health, SafeWork NSW and NSW Food Authority) where there is actual or potential material harm to the environment or public health and safety, or if the pollution incident results in actual or potential loss or property damage of aggregate cost exceeding $10,000 (refer Figure 17).

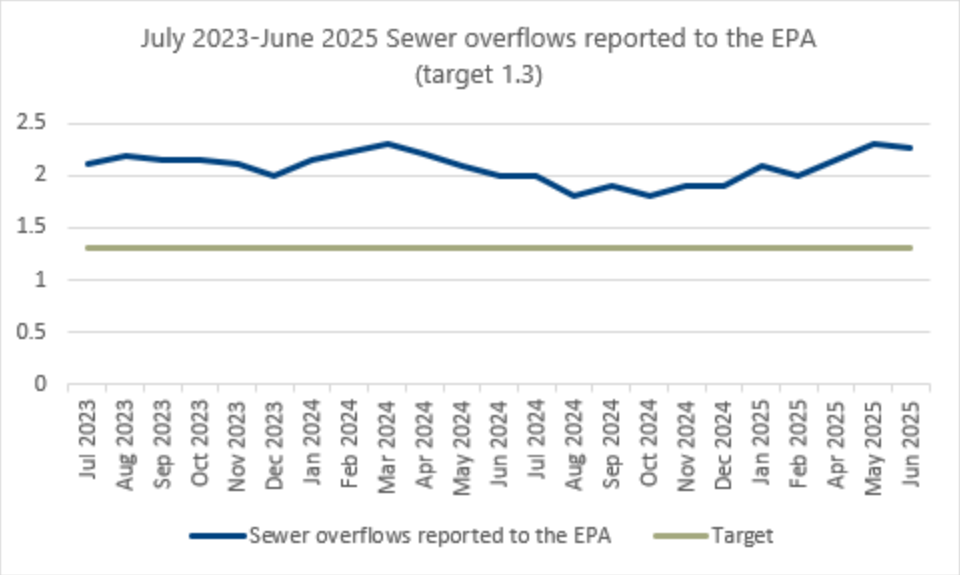


Figure 17: Sewer overflows reported to EPA

The trend for sewer breaks and chokes is improving, with a combination of community education and preventative maintenance strategies. The education is having positive results (refer to Table 5).

Photo: 357_358_2292_A.JPG
8.2m, Defective junction, roots are growing into and/or down the connecting conduit, magnitude of obstruction 5-20% , at 9 o'clock

A "fat berg" at a sewerage manhole

4.6.1 Operational

- Review packages of maintenance chamber renewals to address this specific failure mode.
- New trenchless sewer rehabilitation contract has been awarded.
- Operations award of new reveal and seal contract[10]
- Improvement in data and fault reporting to improve decision making.
- Using CCTV process to better understand maintenance chamber issues and where planned activities should be targeted.
- Isolation for power generation at Sewerage Pump Stations (SPS) that are critical infrastructure and located within State Environmental Planning Policy (SEPP) environmental sensitive areas.
- Vacuum Sewer System Refurbishments at Davistown, St Hubert's Island, West Gosford and Tacoma have included approx. 950 vacuum pots. This is to address wet weather issues.
- Critical vacuum main repairs – several repairs have been completed at St Hubert's Island and Tacoma because of vacuum main leaks identified from the vacuum sewer refurbishment. These leaks introduce air back into the vacuum system requiring the vacuum pumps to operate for longer periods of time to maintain the same pressure. Analysis of one repair in the WS30 (Tacoma) system showed the average run time for two pumps dropped from 15hrs/day to 1.65hrs/day, an 89% reduction in running time and subsequent energy consumption and costs.
- Introduction of period contract for pressure sewer main condition assessments. The contract includes the use of the Pipeline Condition Assessment technology (p-CAT) screening technique to better target more invasive testing methods on compromised sections of pipelines. This allows council to target its mains renewal programs at the right assets at the right time. Please refer to Figure 18.
- Developing a Dry Weather Surcharge Management Strategy.

https://www.centralcoast.nsw.gov.au/council/media-release/new-pipeline-technology-set-improve-water-and-sewer-planning-service

[10] Reveal and seal is where the sewer main is exposed and repaired with a sealant. It can be both a permanent and temporary fix.

The 'p-CAT' condition assessment precision can save on repair costs by prioritising pipe renewals, and repairing and replacing the right pipes at the right time.

Figure 18: p-Cat categorisation of pipe prioritisation

The Dunny Do's and Dunny Don'ts community education program regarding what you can and can't put down the toilet and waste drains in the home. Please refer to Figure 19.

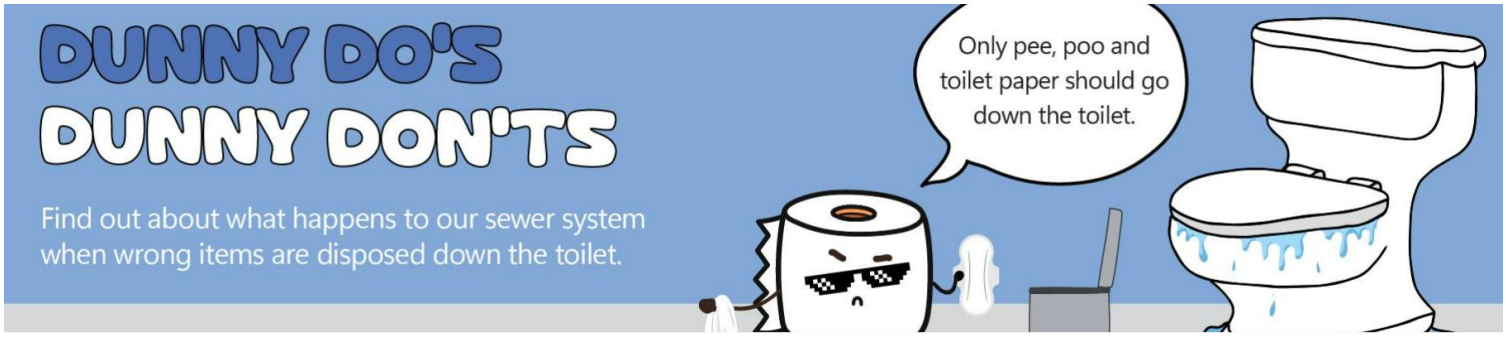


Figure 19: Dunny Do's and Dunny Don'ts campaign

This education program is having positive results on sewer overflow and blockages over the last twelve months, reducing blockages and overflows (caused by fat) from 32 down to 18 and caused by foreign objects from 36 down to 25.

Sewer main breaks and chokes are based per 100 km of main. In June 2024, the number of main breaks and chokes per 100 km of main was 3.66, this has reduced and in May 2025 this has reduced to 2.7 per 100 km main.

Table 5: Blockages caused by fat and foreign objects

Month	Caused by fat	Caused by foreign objects
May 2024	2	5
June 2024	9	4
July 2024	5	8
August 2024	6	5
September 2024	7	9
October 2024	2	5
November 2024	1	6
December 2024	4	6
January 2025	3	3
February 2025	1	2
March 2025	6	5
April 2025	3	3

4.6.2 Capital Works Program

Over the current determination period, Council is investing in pump station renewals, vacuum system upgrades and renewal programs, including the following:

- Sewer Pump Station Renewal – McDonagh Rd Tacoma (WS29)
- Sewer Pump Station Renewal – Crystal St Forresters Beach (FB1)
- Sewer Rising Main Replacement – Mannering Park (MP08)
- Sewer Network and Automation Replacements – region-wide
- Sewer Reactive and Program Planning – region-wide
- Sewer Pump Station Civil Remediation – Daley Ave Daleys point (DP3)
- Sewer Main Rehabilitation Program – region-wide
- Sewer Pump Station Renewal – McDonagh Rd Tacoma (WS29)
- Sewer Pump Station Renewal – Crystal St Forresters Beach (FB1)
- Sewer Rising Main Replacement – Mannering Park (MP08)
- Sewer Network and Automation Replacements – region-wide
- Sewer Reactive and Program Planning – region-wide
- Sewer Pump Station Civil Remediation – Daley Ave Daleys point (DP3)
- Sewer Main Rehabilitation Program – region-wide
- Sewer Pump Station Minor Asset Renewal Program – region-wide
- Sewer Pump Station Electrical Switchboard Replacement Program – region-wide
- Sewer Rising Main Replacement – Koolewong Road Gwandalan (GW02)
- Sewer Pump Station Renewal – Government Road Summerland Point (GW05)
- Sewer Pump Station Renewal – Lagoon Street Ettalong Beach (E01)
- Sewer Pump Station Renewal – Bayside Dr Green Point (GP03)
- Sewer Pump Station Renewal – Mulhall St Wagstaffe (HB04)
- Sewer Pump Station Renewal – Brisbane Water Dr Koolewong (WG08)

- Sewer Pump Station Access Upgrades – Hawke St Kincumber (K05)
- Sewer Maintenance Services Minor Asset Renewals
- Sewer Pump Station Renewal – Marks Road Gorokan (TO12)
- Sewer Pump Station Renewal – Station Street Woy Woy (WW04)
- Sewer Pump Station Renewal – Cedar Crescent Blackwall (WW14B)
- Sewer Pump Station Renewal – Woy Woy Road Woy Woy (WW13C)
- Sewer Vac System Refurbishment – Tacoma
- Sewer Vac System Refurbishment – Davistown Phase Two
- Sewer Rising Main Renewal – Mona Road Charmhaven (CH06)
- Sewer Southern Network Upgrade – region-wide
- Sewer Telemetry Network Renewal – Kingfisher RTU – region-wide
- Sewer Rising Main Partial Replacement – Virginia Rd Warnervale (CH13)
- Sewer Rising Main Partial Replacement – Wilfred Barrett Dr Magenta (TO36)
- Sewer Rising Main Partial Replacement – Gosford Racecourse to Perina Rd West Gosford (WGMJR)
- Sewer Rising Main Killcare Carrier Partial Replacement – Bensville (B01).

4.7 Quality treatment sewer

Council processes 87 million litres of sewage daily at eight treatment plants across the Central Coast, with each servicing its own local area. They are located at Toukley, Wyong South, Bateau Bay, Gwandalan, Charmhaven, Mannering Park, Kincumber, and Woy Woy.

Most sewage undergoes secondary treatment and is discharged into the ocean at Winney Bay in the south or Norah Head or Wonga Point ocean outfalls in the north.

The Environment Protection Authority is the regulator responsible for issuing and managing Council's Environment Protection Licences (EPLs) at these outfalls. These licences regulate the activities with environmental impacts, setting conditions for pollution control and monitoring.

Please refer to the link below for more information:

https://lovewater.centralcoast.nsw.gov.au/council/our-water/our-sewerage-system

Figure 20: Aerial photo of Bateau Bay STP

4.7.1 Operational

Council has been improving its operational treatment processes by the addressing the following issues:

- Enhancement of the rag and debris removal process (fixed the carpet rolling) at the screens at Kincumber STP. This has been achieved by inflows from Kincumber SPS, refurbishing the screens, and implementing a new control program.
- Replacement of air diffusers at Bateau Bay STP in Reactor 1. This has increased efficiency from new air diffusers and reduced aeration hours from 22.5 hours per day down to approximately 16 hours. BOD and Total Nitrogen at the ocean outfall have both reduced since the diffuser replacement, improving the performance of the STP, and reducing impact to the environment.
- Improvement in septicity management[11] in the Toukley STP catchment areas in addition to refurbishment of the odour control bed at the inlet works. Numerous odour complaints were being received in the locality of the STP due to offensive odours reaching neighbouring properties. A combination of solutions was implemented in the network based on odour monitoring results (running a small amount of recycled water into one SPS to reduce overnight septicity and recommissioning an air compressor to maintain oxidation in another pump station). The odour bed at the inlet works was also refurbished. The combination of these efforts has stopped all complaints for Toukley STP that are attributed to these causes and has greatly improved quality of life for our neighbouring community. The improvement has reduced the odour complaints from five in 2022-23 to zero in 2024-25.

4.7.2 Capital Works Program

- Sewage Treatment Plant Process Improvements – Bateau Bay
- Sewage Treatment Plant Sludge Mechanical Dewatering Renewal – Kincumber
- Sewage Treatment Plant Upgrades – Wyong South
- Sewer Pump Station Chemical Dosing – Bateau Bay
- Sewage Treatment Plant Sludge Lagoon Refurbishment – Toukley
- Sewage Treatment Plant Operational Improvements – Kincumber
- Sewage Treatment Plant Aerator Replacement – Woy Woy.

[11] Septicity management is addressing the build-up of organic matter when it decomposes producing foul odours in the absence of free oxygen.

4.8 Environmental planning

Council's obligation for environmental planning is governed by legislative requirements. It is predominantly linked to air (odour), sea (outfalls), people (delivered services), land (protecting our environment) and water (water quality, safe swimming beaches, estuaries, and lakes).

The following are current environmental regulatory standards that are non-negotiable:

- Australian Drinking Water Guidelines (ADWG) – meeting guidelines – NSW Health
- Environment Protection Authority (EPA) – Environment Protection Licences (EPLs) (load and volume) linked to the three effluent ocean outfalls
- Annual EPA returns (non-compliances) identified failures
- EPLs – Pollution Reduction Programs (PRPs) – reviews licence and propose solutions in EPLs
- Quality Management System – A risk-based management system reflecting the principles and practices of water management. It incorporates the environmental management system
- Environmental Management System (EMS)
- Bureau Of Meteorology (BOM) greenhouse emissions
- Dam Safety in accordance with requirements of Dam Safety NSW
- Natural Resource Access Regulator (NRAR) as an independent water regulator which oversees the enforcement of water management laws in NSW.

4.8.1 Pollution reduction programs

Pollution reduction programs are actions that relate directly the EPLs, that address a specific environmental issue, or a non-compliance recorded against the licence. Please refer to Table 6.

Council's licence conditions can be located on its website.

https://www.centralcoast.nsw.gov.au/environment/environmental-programs/environmental-management

Table 6: Pollution reduction programs

Action	Status
Review of Treated Effluent Quality Data and Propose Appropriate Limits	In Progress
Investigation into Inundation of Sewage Infrastructure in Wyong South STP Reticulation System	In Progress
Overflow Relief Cap (ORC) product research and trail if deemed appropriate	In Progress
Manhole lid waterproof sealing	In Progress
SPS inspection program	Complete
Investigative program in WS13 and WS38	In Progress
Gravity main relining program	In Progress
Wyong South STP Wet Weather Pond Works Schedule	Complete
Wyong South and Charmhaven Effluent Ponds Transfer Pump Upgrades	In Progress
Charmhaven STP Upgrade Project	In Progress
Norah Head Ocean Outfall Monitoring Program	In Progress
Investigations into the Optimisation and Future Unit Operations at the Toukley STP	In Progress
Provide a report detailing progress of works to optimise Toukley STP	In Progress
Provide a report on actions taken in relation to the investigation of upgrading Toukley STP, taking into consideration the current design of the STP and effluent quality needs of the receiving environment	In Progress
Investigation into Inundation of Sewage Infrastructure in Charmhaven STP Reticulation System	Not Started
Wyong South STP Wet Weather Pond Remediation	In Progress
Full scope of works to safely maximise storage capacity (including removal of accumulated sludge) and safely deal with high volume inflows and outflows at WSWWSP	Not Started
Charmhaven STP Wet Weather Pond Remediation	In Progress

Action	Status
Full scope of works to maximise the storage capacity at CWWSP (including the removal of accumulated sludge) with evidence that the Licensee can feasibly complete the works by completion date	In Progress
The licensee must provide an updated plan of the sewage treatment plant premises	Complete
Ecological and Human Health Investigations into Impacts of Winney Bay Ocean Outfall	In Progress
Investigations and Upgrades to the Sewerage Reticulation within the Terrigal Lagoon Catchment	Complete
Wonga Point Ocean Outfall Monitoring Program	In Progress
Implementation of Improved Odour Controls	Complete
Upgrade the existing Odour Control Facility at Bateau Bay STP	Complete
Replacement of activated carbon media in the sedimentation tank odour control unit	Complete
Implement the optimisation exercise using odour data loggers at the inlet works to monitor chemical dosing effectiveness in managing odour	Complete
Investigation into a deodorisation system	Complete

4.8.2 Environmental practices

Council undertakes a range of environmental practices to ensure compliance with legislation, improve the natural environment and minimise harm caused by its activities:

- Manage an EMS to remain compliant with ISO 14001
- All infrastructure activities are assessed under a Review of Environmental Factors in accordance with the *Environmental Planning and Assessment Act 1979* (EP&A Act). This assessment includes impacts to flora, fauna, biodiversity, water, soil, heritage, community and social.
- Bushfire risk management for all critical assets and the drinking water catchments
- Implementation of vegetation offsets where applicable for vegetation clearing
- Impacts are assessed and mitigated to protect waterways, biodiversity, threatened species and heritage, e.g fish weir to enable fish migration whilst supporting infrastructure development (Figure 21)
- Routine water quality monitoring is undertaken to understand background environmental conditions
- Disturbance to ground or trees requires an assessment of potential impacts to Aboriginal heritage utilising a Due Diligence Assessment
- Weed management in drinking water catchments
- Biodiversity monitoring and recording through drinking water catchments
- Climate change risk and adaption – long term plans to include infrastructure resilience, reduction of emissions and renewable energy.

Figure 21: Fish weir on Wyong River

4.9 Effective planning

Effective planning applies to both water and sewer infrastructure, ensuring that strategies are in place for asset capability, water supply, sewerage treatment and ability to deliver required services, taking into consideration increases in population, properties, and business development. It also includes the delivery of key capital investment for upgrades or replacement of assets.

Effective planning needs sound strategies to ensure the following:

- Water security – supply for now and into the future
- Water quality
- The environment, including climate change
- Sewage treatment – ensuring that the treatment plants have the capacity to treat the increase in volumes
- Assets and infrastructure
- Financial sustainability.

4.9.1 Central Coast Council Water Security Plan – 2023

The adoption of an effective plan is essential for the Central Coast to ensure the region's water supply needs are met over the short, medium and long terms for both normal and drought conditions. The plan must reflect community values, be cost effective and sustainable for the future. The plan must review and build in previous plans such as WaterPlan 2050 that was developed during the millennium drought. The new plan – The Central Coast Water Security Plan – has reviewed and updated the region's supply and demand balance and developed a portfolio of actions based on new technologies, climate trends and community values. The millennium drought (2001-2009) changed the Central Coast as a community in valuing our water supply. The incredible fact is that in 2021 less water was being used across the Central Coast than in 2000, whilst providing water to over 45,000 more residents. This demonstrates the changing attitudes of the community towards water use and conservation.

https://cdn.centralcoast.nsw.gov.au/sites/default/files/2023-12/Central-Coast-Water-Security-Plan_June-2023.pdf

4.9.2 Water Conservation

The Central Coast Water Security Plan (CCWSP) guides Council's focus and commitment to a safe and secure water future on the Central Coast. An "All options on the table" approach was taken to develop the plan, which consists of three pillars:

- Pillar 1 – Water Conservation
- Pillar 2 – Maximise use of existing water resources
- Pillar 3 – Develop new climate independent water sources.

Water conservation 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. During the development of the CCWSP, Council sought the community's views on the proposed demand and supply side options. The community valued reliability, affordability and minimising environmental impact most. Based on these values, the community placed water conservation as equal first ranked option with 92% of the group expressing support of Council pursing this. In response, Council is developing a Water Conservation Strategy to guide the implementation of water conservation initiatives and outcomes on the Central Coast.

The Water Conservation Strategy has been developed around five focus areas which comprise of:

- Water efficiency: residential and non-residential demand management programs
- Active leakage management: Leak detection and pressure management programs
- Water Recycling: Wastewater recycling for non-drinking
- Community awareness: Water and Sewer Community Engagement and Education programs
- Smart Metering programs.

4.9.3 Capital Works Program

Council continues to invest in its capital works in alignment with growth. The following capital works programs are revenue invested in future sustainability:

- Sewer Infrastructure Reinforcements – Gosford CBD
- Sewage Treatment Plant Major Augmentation Works – Charmhaven
- Sewer Pump Station and Rising Main Upgrade – Hamlyn Terrace (CH12-13)
- Sewer Infrastructure – Warnervale Town Centre
- Sewerage System Upgrades – Gosford CBD Racecourse Precinct
- Sewage Treatment Plant Major Upgrade – Gwandalan
- Sewerage Network PLC Replacement – region-wide
- WIKA Capital Expenditure – Sewer
- Water Trunk Main Installation – Mardi to Warnervale
- Water Infrastructure Reinforcements – Gosford CBD
- Water Pump Station Capacity Upgrade – Mooney Mooney Dam Somersby
- Water Infrastructure – Warnervale Town Centre
- Water Treatment Plant Trunk Mains to Clear Water Tank Upgrades – Mardi
- WIKA Capital Expenditure – Water.

Figure 22: Central Coast Water Security Plan

5 Abbreviations

ADWG	Australian Drinking Water Guidelines
BOM	Bureau of Meteorology
CCPs	Critical Control Points
CCWSP	Central Coast Water Security Plan
DPE	Department of Planning and Environment
DWMS	Drinking Water Management System
EMS	Environmental Management System
EPA	Environment Protection Authority
EPL	Environmental Protection Licence
IPART	Independent Pricing and Regulatory Tribunal
LGA	Local Government Area
NPR	National Performance Report
NRAR	National Resource Access Regulator
NWI	National Water Initiative
PRP	Pollution Reduction Programme
STP	Sewage Treatment Plant
WSAA	Water Services Association Australia
WTP	Water Treatment Plant

6 References

National Performance Reports: Water Information 2023-2024

Central Coast Council | Water and Sewer

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