



UNIVERSITY
OF WOLLONGONG
AUSTRALIA

Water Management Action Plan 2022-2024

University of Wollongong

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Acknowledgement of Country

We Acknowledge that Country for Aboriginal peoples is an interconnected set of ancient and sophisticated relationships.

The University of Wollongong spreads across many interrelated Aboriginal Countries that are bound by this sacred landscape, and intimate relationship with that landscape since creation.

From Sydney to the Southern Highlands, to the South Coast.

From fresh water to bitter water to salt. From City to Urban to Rural.

The University of Wollongong Acknowledges the Custodianship of the Aboriginal peoples of this place and space that has kept alive the relationships between all living things.

The University Acknowledges the devastating impact of colonisation on our campuses' footprint and commit ourselves to truth-telling, healing and education.



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1. Introduction

This Water Management Action Plan has been developed to establish priorities and tasks to be actioned by the Environment Unit over 2022-2024 specific to the management of water at UOW campuses and facilities.

The UOW Sustainable Futures Committee (SFC) oversees the pursuit and delivery of UOW environmental sustainability objectives as well as the integration of environmental Sustainable Development Goals and sustainability initiatives and targets across all aspects of University activities.

The Environment Unit's focus is on the environmental sustainability of UOW operations and implements initiatives and actions to reduce impacts and address relevant UN Sustainable Development Goals. The Environment Unit is working with the Sustainable Futures Committee to achieve common objectives.

The management of energy and carbon on our campuses supports the implementation of the following UN Sustainable Development Goals:

- Goal 6 Clean water and sanitation
- Goal 12 Responsible consumption and production
- Goal 14 Life below water
- Goal 15 Life on land

The objectives of this Water Management Action Plan are to define strategies and actions to achieve the following at our campuses and facilities:

- Reduce and monitor potable water use
- Maximise rainwater capture capacity and water reuse and recycling opportunities
- Manage and monitor the water quality of our ponds and discharges to stormwater to reduce marine pollution
- Comply with NSW water quality standards and guidelines
- Improve awareness and educate the UOW campus community about water conservation and water pollution and water quality issues.

2. Background

The previous Water Management Action Plans have focused on Wollongong Campus (where the Environmental Unit had operational control) and on water consumption and management. However, following the implementation of the One UOW organisational structure, the responsibilities of the Environmental Unit expanded to include student accommodation and other Australian Campuses thus, this Action Plan now incorporates all these sites. The data presented below encompasses all Australian Campuses and accommodation sites and is presented on a calendar year.

UOW consumed 167 ML of water during 2021 which was a considerable reduction from 273 ML in 2018, see Figure 1. The rainfall registered at the Bellambi weather station has been included on the figure and a relationship is observed with decreasing water consumption with increasing rainfall. During dry periods numerous initiatives were introduced to reduce consumption including ceasing of topping up of water features/pond systems, cleaning of windows, pavers and vehicles etc. however, the reduced rainfall resulted in insufficient rainwater for irrigation of sporting fields and potable water was required to be used to maintain the quality of the grounds for sporting events. Additionally COVID 19 has had an impact on water consumption with reduced students and staff on campus but an increase in cleaning activities. Combined these make it difficult to quantify the effect that sustainability initiatives have had on water consumption when considering drought followed by consecutive La Niña events and the considerable changes that COVID 19 has had including campus closures and an increase in working or studying from home.

Record rainfall has already been recorded for 2022 but the mean annual rainfall has been used for 2023 and 2024 projections. Water consumption is expected to increase with a return to average rainfall and as more staff



and students return to campus. Although difficult to track, a 2% year on year reduction has been set with 2016 being used as a baseline year with it being the closest recent year to receiving average rainfall.

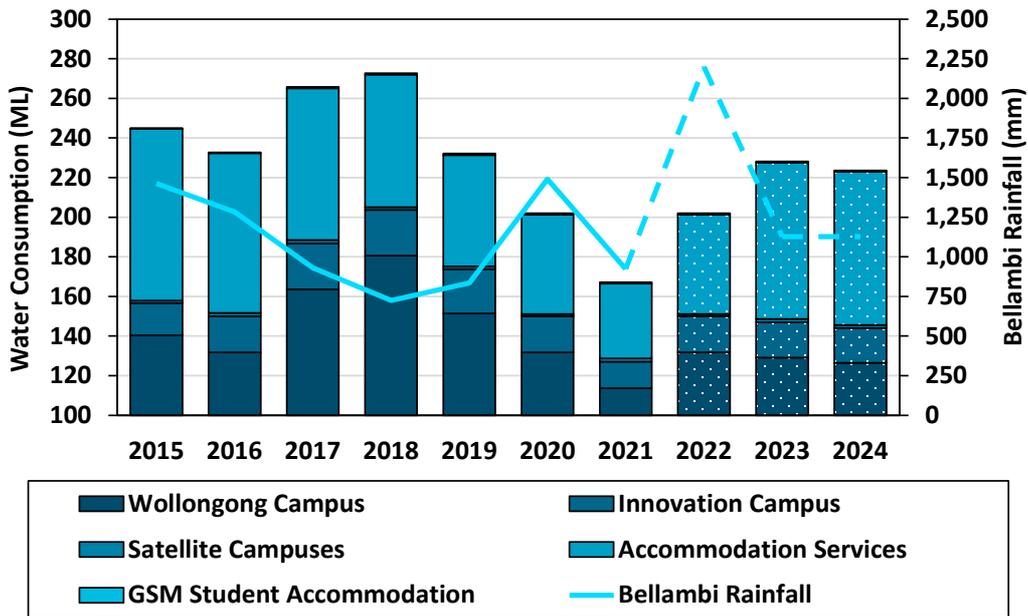


Figure 1. Annual water consumption

Although the ultimate goal is to reduce water consumption to as low as possible, these values will fluctuate year on year and may increase as the campuses continue to grow to accommodate more students, staff, and research activities or as mentioned above as rainfall fluctuates. As such a more indicative measure of the performance of the campuses is water consumption intensity on a per gross floor area (GFA).

When examining the water consumption intensity per GFA there is a general downward trend observed from 2017 despite 2018 receiving less rainfall, see Figure 2. Accommodation had the largest reduction in this period falling 56% from 2017 however, some of this is attributed to the new Jeroo, Jurunga, and Jerrara accommodation facilities coming online in 2018. Water consumption intensity also reduced by 28% and 23% over this period for the Graduate Medicine Student Accommodation and Satellite Campuses respectively, suggesting that the water reduction initiatives had an impact on reducing water intensity. Water consumption at Wollongong Campus did increase by 9% over this period but this was still a great achievement given the 28% less rainfall recorded in 2018 compared to 2017. Below average rainfall was again observed in 2019 but water intensity was reduced by 19% for Wollongong Campus and 15% for Accommodation services when compared to 2018, further suggesting that the water initiatives were having a positive impact. The following sections provide greater detail into the strategic areas and actions that the Environment Unit will be targeting in the next few years to further improve water efficiency across all UOW sites.



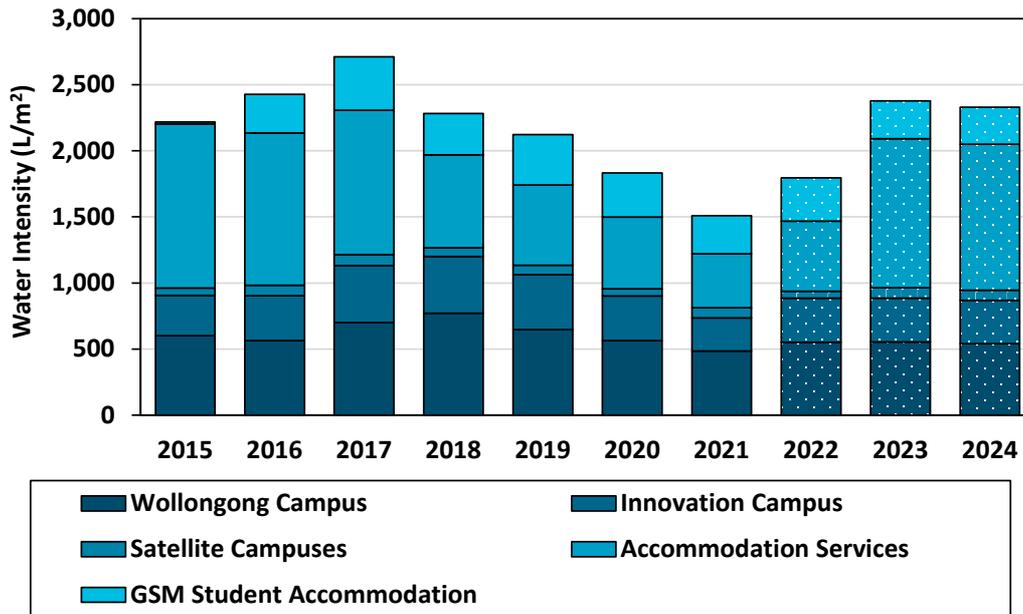


Figure 2. Annual water consumption intensity by gross floor area

3. Strategic Areas

This Action Plan focuses on the following areas:

- **Improve efficiency and reduce loss of potable water** - continue to work to improve water efficiency through efficient equipment, systems controls and practices and work to detect and reduce water leaks.
- **Rainwater harvesting and other water reuse technologies** - Capture rainwater and reuse it for suitable purposes such as irrigation, outdoor water features or toilet flushing which do not require potable water. Other water reuse technologies include greywater treatment and reuse.
- **Stormwater management and water pollution prevention** - management of stormwater to reduce downstream impacts and assess the environmental risk of activities and minimise pollution entering the waterways and stormwater system.
- **Strategic and technical advice, education and engagement** - provide strategic and technical advice with relevant stakeholders and undertake education and engagement activities to ensure efficient use of water and protection of water quality and prevention of water pollution to our water ways, stormwater systems and downstream catchments.



4. Water Management Actions

The following actions have been identified as potential projects/initiatives to improve water performance according to the strategic actions defined above.

Table 1 – Reduce potable water use, improve efficiency and reduce losses

Action	Priority	Indicative Date
Conduct water saving audits to determine opportunities for water savings	High	Ongoing
Review processes and procedures and develop strategies to reduce water consumption for outdoor purposes and indoor purposes	High	Ongoing
Assess the installation of additional water efficiency appliances and fittings	Medium	Q3 2023
Assess strategies to further reduce swimming pool water losses at Wollongong Campus	Low	Q4 2024
Assess opportunities to reduce consumption of cooling towers	Low	Q4 2024
Work with UOW Pulse and retail tenants to support water efficiency actions (practices and improved infrastructure)	Medium	Q4 2023
Work with Faculties to identify high water use equipment and any opportunities for reducing potable water use, (through practices or improved infrastructure)	High	Ongoing
Through the UOW Procurement Policy prioritise the purchase of assets and products that are water efficient or reuse water	High	Ongoing
Identify locations of existing major water infrastructure	Medium	Q4 2024
Work to establish systems to identify major water infrastructure as they are installed	High	Ongoing
Assess opportunities to restrict water supply to selected irrigation systems.	High	Ongoing
Develop and refine processes to reduce time required to find exact location of concealed leaks.	High	Ongoing
Continue to work to reduce unmetered water feeds on the campuses	Medium	Ongoing
Apply building standards to minimise water use in new buildings and refurbishments and in maintenance activities and landscaping	High	Ongoing



Table 2 – Rainwater harvesting and other water reuse technologies

Action	Priority	Indicative Date
Assess and review the status and effectiveness of existing rainwater collection and reuse and identify opportunities for improvement	Medium	Q1 2024
Identify opportunities for new rainwater tanks and reuse as well as other water reuse technologies (e.g. greywater treatment and reuse)	Medium	Q1 2024
Develop strategies to monitor ongoing performance of rainwater collection and reuse and measure the amount of water reused	Medium	Q1 2024

Table 3 – Stormwater management and water pollution prevention

Action	Priority	Indicative Date
Work with Work Health and Safety, Faculties and Divisions, UOW Pulse, tenants and contractors to assess the environmental risks to stormwater by our activities and identify opportunities to address and reduce these risks.	Medium	Q1 2024
Work with Work Health and Safety, Faculties and Divisions, UOW Pulse, tenants and contractors to ensure safe work methods include processes to prevent pollution.	Medium	Q1 2024
Develop a plan to address and minimise any risks to stormwater that are identified and prioritise actions based on risks.	Medium	Q1 2024
Work with FMD assets and maintenance and IMTS to ensure contractors are aware of their environmental obligations to avoid and prevent pollution to stormwater and how to report and manage incidents of water pollution.	High	Ongoing
Manage trade waste systems to ensure compliance with trade waste agreements for disposed via the sewerage system	High	Ongoing
Ensure compliance with NSW water quality standards, guidelines and legislative requirements.	High	Ongoing



Table 4 – Strategic and technical advice, engagement and collaboration

Action	Priority	Indicative Date
Work with the Sustainable Futures Committee to review water efficiency, rainwater harvesting and reuse and other water management targets.	Medium	Ongoing
Work with UOW Finance and Sustainable Futures Committee, Policy Working Group to embed water efficiency and water harvest and reuse objectives into organisation wide procurement processes, and other relevant procedures and policies.	Medium	Ongoing
Work with UOW Finance and Sustainable Futures Committee, Policy Working Group to embed water quality management objectives into organisation wide procurement processes, and other relevant procedures and policies.	Medium	Ongoing
Integrate water management and objectives into Campus Estate plans and design guidelines (e.g. water sensitive urban design principles, water efficiency, water harvest and reuse, stormwater management and water quality)	Medium	Q4 2024
Work with Work Health and Safety (WHS) to embed water pollution risk management and pollution reporting and response are included in relevant WHS policies, guidelines and Safe work methods and procedures.	Medium	Q4 2024
Produce tools and information, behavioural change and awareness programs to support water efficiency and water reuse objectives.	Medium	Ongoing
Produce tools and information, behavioural change and awareness programs for staff and students to raise awareness and prevent and minimise risk of pollution to stormwater and how to report and manage incidents.	Medium	Ongoing

Table 5 – Water administration, data analysis and reporting

Action	Priority	Indicative Date
Continuously improve and manage water billing verification process.	Medium	Ongoing
Track, forecast and plan water consumption and expenditure.	Medium	Ongoing
Analysis of data for ongoing performance and emerging trends and report and track against University KPIs and targets	Medium	Ongoing
Provide data and prepare water performance reports as required for enquiries and business needs and benchmarking	Medium	Ongoing



Table 6 – Water monitoring and reporting

Action	Priority	Indicative Date
Manage and review the water metering and monitoring system and upgrade and expand as required.	Medium	As required
Monitor water consumption and performance at all campuses and facilities.	Medium	Monthly
Measure and verify actions/ events impacting on water consumption.	Medium	Monthly
Undertake monitoring in our ponds and waterways for health of aquatic systems and water quality	Medium	As required
Monitor and track water pollution incidents and corrective actions via SafetyNet system	High	As required
Implement online monitoring process to identify potential leaks at early stages.	Medium	Q4 2023

5. Delivery

The prioritisation and implementation of specific actions defined in this Action Plan will depend on the environmental and financial benefits of each action, technical feasibility, budget and resources available and interaction with other projects and works at UOW.

A strategic and structured approach will be taken to ensure the suitable assessment, development and implementation of relevant actions by:

- Identifying and prioritising actions based on environmental benefits, financial feasibility and onsite investigations.
- Liaise with the relevant stakeholders to assess technical, operational and financial requirements.
- Prepare detailed business cases for UOW approval including:
 - Recommendation
 - Objectives
 - Scope
 - Environmental, operational, financial and risk analysis
 - Delivery method
 - Program

The final evaluation, planning, funding and implementation of these actions are intended to be achieved utilising the resources of the Facilities Management Division and engaging relevant contractors when required.

This Action Plan will be reviewed annually to monitor and record the status of the different strategies and actions.



Water Management Action Plan 2022-2024

Final Audit Report

2022-10-19

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