SDG 6

CLEAN WATER AND SANITATION

INTRODUCTION

Ensuring availability and sustainable management of water and sanitation for all, across the SRM University-AP campus and its neighbouring communities.

SDG 6 - Clean Water and Sanitation - calls for universal access to safe drinking water and sanitation, the efficient and sustainable use of freshwater resources, and the treatment and safe reuse of wastewater. For a residential university campus such as SRM University-AP, this goal translates directly into how water is sourced, treated, distributed, consumed and returned to the environment every single day.

SRM University-AP approaches SDG 6 as a campus-wide water stewardship programme rather than a single initiative. The University operates its own network of water treatment plants, sewage treatment plants and reverse-osmosis units to secure a safe and continuous supply of potable water while treating and reusing wastewater generated across hostels, academic blocks and dining facilities. This is complemented by an extensive rainwater-harvesting network, borewell-recharge structures, low-flow plumbing fixtures and dual-flush sanitation systems that together reduce freshwater withdrawal and support groundwater recharge.

Beyond infrastructure, the University's academic and outreach ecosystem actively advances SDG 6 - through classroom and industry-linked teaching on water treatment and circular-water concepts, technical events and exhibitions, community outreach on hygiene and safe water practices in neighbouring schools and villages, and a growing body of peer-reviewed research on water treatment, water quality and wastewater valorisation. The sections that follow present this work under four heads: campus water infrastructure and facilities, community outreach, events and initiatives, and research and publications, concluding with the University's overall SDG 6 impact story.

WATER MANAGEMENT & CAMPUS FACILITIES

SRM University-AP meets its campus water requirements through a self-operated network of treatment, distribution and reuse infrastructure. The figures below, drawn from the University's Annual Sustainability Report data, summarise the scale of this system before each facility is described in detail.

Water at a Glance

4,60,827 m³ *Total annual water consumption*	**105 L** *Per-capita consumption / day*	**65,853 m³** *Potable water inflow / month*	**45,599 m³** *Potable water treated / month*
7 *Water Treatment Plants (1,950 m³/day)*	**4** *Sewage Treatment Plants (1,893 m³/day)*	**7** *RO Plants (13,750 LPH capacity)*	**31,669 m³** *Wastewater treated / month*
11 *Rainwater harvesting systems*	**3,045 m³** *Rainwater harvested / year*	**297 m³** *Greywater reused / month*	**14** *Open borewells on campus*

4,059	486	457	124 + 2
Taps - all low-flow fixtures	*Washrooms across 6 campus zones*	*Dual-flush toilets installed*	*Water storage tanks (in / outside campus)*

- **Sewage Treatment Plants (STPs)**

Treating wastewater at source

SRM University-AP operates four Sewage Treatment Plants with a combined capacity of 1,893 m³ per day, together with the University's broader wastewater-treatment facilities rated at 1,908 m³ per day.

These plants treat sewage generated across hostels, academic blocks and dining facilities before it is discharged or reused. On average, the University generates about 70,614 m³ of wastewater every month, of which 31,669 m³ is treated monthly before discharge, and roughly 15 kg of sludge is generated per month during the process.

SDG 6 relevance: continuous sewage treatment prevents untreated wastewater from reaching the environment and is the foundation for the campus's water-reuse programme.



Sludge holding and management

Sludge separated during sewage treatment is collected in dedicated sludge-holding tanks before further handling, keeping the treatment lines clear for continuous operation.

This step supports safe, hygienic disposal of treatment by-products and is an integral part of the University's approach to responsible wastewater management under SDG 6.



- **Water Treatment Plants (WTPs)**

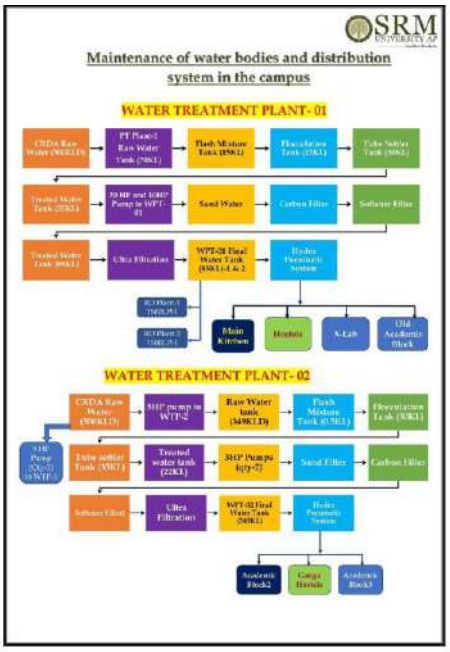
The campus draws raw water and processes it through seven Water Treatment Plants with a combined capacity of 1,950 m³ per day. Four of these plants (WTP-01 to WTP-04) follow a documented multi-stage process - flash mixing, flocculation, tube settling, sand filtration, carbon filtration, softening and ultrafiltration - before the treated water is pushed through a hydro-pneumatic distribution system to the Main Kitchen, hostels, X-Lab, academic blocks and other campus destinations.

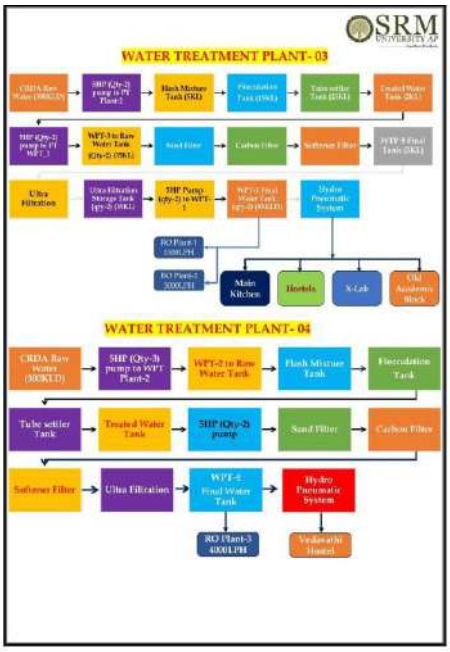
Multi-stage treatment train

Pressure sand filters, activated-carbon filters and softeners installed in sequence remove suspended solids, organic matter and hardness from raw water before it proceeds to ultrafiltration.

Each plant is sized to serve specific campus zones - for example, WTP-01 supplies the Main Kitchen, hostels, X-Lab and the Old Academic Block, while WTP-04 supplies the Vedavathi Hostel.







- **Reverse Osmosis (RO) and Ultrafiltration**

Polishing treated water for potable use

Seven RO plants, with a combined capacity of 13,750 litres per hour, provide a final polishing stage for drinking-water supply across the campus.

Ultrafiltration storage tanks - such as the 35 KL UF storage tank shown alongside - buffer filtered water ahead of RO treatment, ensuring a steady, safe potable-water supply even during peak demand.







- **Treated Water Storage & Distribution**

Metered storage for reliable supply

Treated water is held in gauged storage tanks - each marked with calibrated level indicators - before being pumped into the campus distribution network through hydro-pneumatic systems.

Of the potable water treated, around 51,558 m^3 is consumed on campus each month, with the balance of about 11,950 m^3 accounted for as water lost during the treatment process.



- **Greywater Recycling & Reuse of Treated Water**

Closing the water loop

SRM University-AP reuses treated wastewater for gardening, lawn maintenance and toilet flushing, with approximately 297 m^3 of greywater recycled every month.

This directly reduces the campus's dependence on fresh water for non-potable uses and reflects the circular approach to water management that underpins the University's SDG 6 efforts.









● Rainwater Harvesting

The campus operates 11 rainwater-harvesting systems with a combined storage capacity of 22 m^3, connected to a rooftop catchment area of 4,441.63 sqm. Together, these systems harvested approximately 3,045 m^3 of rainwater over the year, helping recharge groundwater and reduce pressure on freshwater withdrawal.



● Constructed Water Bodies & Tanks

On-campus water storage landscape

Constructed ponds and water bodies within the campus landscape add to the University's overall water-storage and ecological buffering capacity, complementing the 124 tanks maintained inside the campus and 2 tanks maintained outside it.

These water bodies also support local biodiversity and help manage surface run-off during the monsoon.



● Borewell Network & Groundwater Recharge

The campus maintains 14 open borewells that supplement the water supply drawn from treated surface sources. Dedicated recharge structures are installed alongside select borewells to direct collected rainwater back into the ground, reinforcing the same groundwater table that the borewell network draws upon.



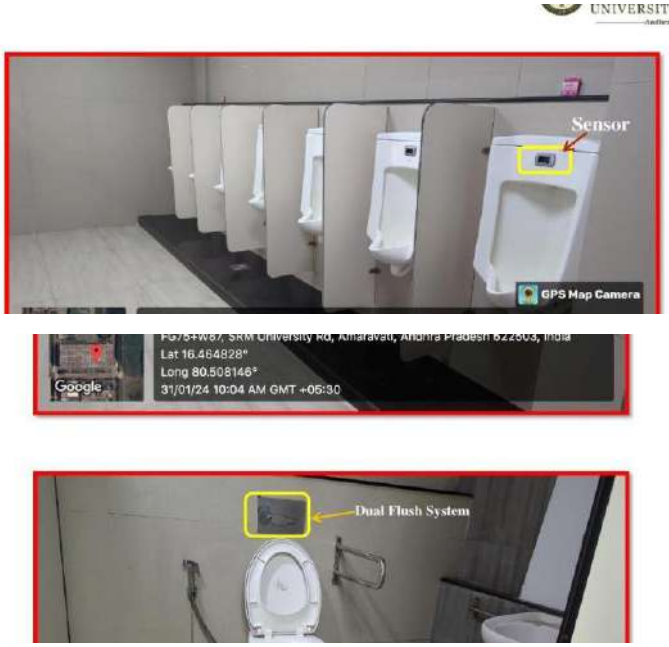


2. Borewell /Open well recharge



● Water-Efficient Fixtures & Sanitation Infrastructure

Water efficiency at SRM University-AP extends down to individual fixtures. All 4,059 taps installed across the campus are low-flow fixtures, reducing water draw at the point of use. Sanitation infrastructure spans 486 washrooms across the University's six major zones - Hostel Block (HB), Value Stream/VS, X-Lab, Student Residences (SR), CVR and JC - of which 457 are fitted with dual-flush toilet systems, and several washrooms additionally use sensor-based fixtures to minimise water wastage.



Zone	HB	VS	X-Lab	SR	CVR	JC
Total washrooms	48	72	24	120	192	30
Male washrooms	24	36	9	60	96	15
Female washrooms	24	36	15	60	96	15

Zone	HB	VS	X-Lab	SR	CVR	JC
Dual-flush toilets	48	72	24	91	192	30

Washroom distribution and dual-flush fitment across the six major campus zones (Annual Report data).

OUTREACH

SRM University-AP's SDG 6 commitment extends beyond the campus boundary into the surrounding schools and communities of Mangalagiri and neighbouring villages. Through the University's social-outreach programme, student and faculty teams have run water-and-sanitation surveys, hygiene-awareness sessions and cleanliness drives that carry safe-water and sanitation practices directly to the people who need them most.

6
Community outreach activities on water & sanitation

288+
Students, residents & schoolchildren reached

● "H2-Oh! The Truth About Water and Sanitation"

Sri Vidyalaya EM High School, Edupugallu | 108 participants

A dedicated SDG 6 project in which a student team surveyed 108 community members and students on the accessibility, reliability and quality of their drinking water and sanitation facilities.

The team identified practical gaps such as unsafe water storage and limited awareness, and followed up with on-site awareness sessions on safe water storage, handwashing and proper sanitation practices.





● Hand Washing Techniques for Orphanage Students

Mangalagiri | 25 participants

An awareness session for orphanage students on personal hygiene and disease prevention, explaining why handwashing matters and demonstrating the correct technique - wetting hands, applying soap, and scrubbing every part of the hand.





● Hygiene Awareness Program

Government School, Mangalagiri | 63 participants

A visit to a local government school where storytelling and interactive games such as "Clean or Dirty" were used to teach primary-school students everyday hygiene habits and encourage healthy behaviour.





● Hygiene Awareness Activity (with SDG 3 - Good Health and Well-Being)

ZPHS Revendrapadu and ZPHS Pedavadlapudi | 7 external participants recorded

An outreach session creating awareness among school students on personal hygiene and cleanliness, covering daily practices such as proper handwashing, oral care, bathing and maintaining clean surroundings.





● Swachh Bharat Cleanliness Drive & Awareness Program

Government Primary School, Neerukonda | 42 participants (35 external + 7 faculty)

A cleanliness drive undertaken with students and teachers to promote hygiene and sanitation, addressing everyday hygiene, health and environmental conditions at the school through structured community activities.





● Cleanliness and Waste Management Student Engagement Program

Mangalagiri | 43 students

A school-based awareness programme on cleanliness, waste management and personal and environmental hygiene, engaging students through both awareness talks and hands-on activities to build responsible cleanliness behaviour.





EVENTS AND INITIATIVES

The University's event records for the 2025-26 academic year identify seven unique events tagged to SDG 6, spanning invited lectures, industrial exposure visits, an industry co-teaching module, a national-level sustainability exhibition and a technical conference. Counted once each to avoid double-counting events that also align with other SDGs, these seven events together engaged close to 950 participant-instances of students, faculty and external stakeholders.

7	~950
Unique SDG 6-tagged events, 2025-26	*Cumulative participant engagements*

● Advancing Water Treatment: From Electrochemical Oxidation to Electrified Membranes

Department of Chemistry | Guest Lecture | 5 March 2026 | 32 participants

An expert guest lecture introducing electrochemical oxidation and electrified-membrane systems capable of removing pharmaceuticals, dyes, pathogens and other emerging contaminants from water, while highlighting energy-efficient, chemical-free treatment approaches.

This was the strongest SDG 6-aligned event of the year: its entire focus was safe, clean and sustainable water and wastewater treatment technology.





● Industrial Exposure and Experiential Learning Visit - APGENCO

Department of Environmental Science and Engineering | 10 December 2025 | 39 participants

An academic visit to the Dr. Narla Tatarao Thermal Power Station that gave students first-hand exposure to large-scale water-treatment processes alongside pollution-control technologies, environmental monitoring and regulatory-compliance practices at an operating industrial facility.





● Industry Co-teaching (ENV 250)

Department of Environmental Science and Engineering | 22 Jan - 6 Feb 2026 | 62 participants

Industry-led co-teaching sessions covering resource recovery, the circular economy and the waste-management hierarchy, with sustainability concepts including Zero Liquid Discharge that connect directly to preventing uncontrolled wastewater discharge under SDG 6.



● Industrial Exposure and Experiential Learning Visit - Jindal Urban Waste Management (JUWM)

Department of Environmental Science and Engineering | 12 September 2025 | 29 participants

A field visit to an integrated municipal solid-waste and waste-to-energy facility that also covered leachate treatment and zero-discharge practices, reinforcing student understanding of how industrial operations protect water resources from contamination.





● Environmental Sustainability Exhibition (ESE-3.0)

Department of Environmental Science and Engineering | 19 September 2025 | APJ Abdul Kalam Auditorium | 342 participants

Now in its third year, ESE-3.0 showcased undergraduate-led sustainability initiatives and drew strong participation from institutions across Andhra Pradesh and Telangana, growing from a national platform into a recognised Southern-India forum for sustainability dialogue.

The exhibition featured student projects and discussions spanning environmental themes including water conservation and responsible resource use, alongside prize-supported recognition for outstanding student initiatives.





Additional SDG 6-tagged activities

Two further events on record for the year carry an SDG 6 tag alongside their primary focus, and are noted here for completeness:

• Real-Time Exposure and Experiential Learning Visit - a public-hearing/EIA field visit (5 December 2025, 25 participants) that touched on environmental and water-related impact assessment as part of a broader regulatory-process learning exercise.

• Green Hydrogen Summit 2025 - a national conference (18-19 July 2025, 418 participants) primarily focused on clean-energy policy and innovation, tagged to SDG 6 for its broader sustainable-resource-management relevance.

RESEARCH & PUBLICATIONS

Between 2025 and 2026, SRM University-AP produced a substantial body of Scopus-indexed research aligned with SDG 6, spanning water and wastewater treatment, drinking-water quality, groundwater management and water-resource sustainability. As per SciVal data (last updated 30 August 2026), the University's SDG 6 research activity stands at the following levels:

111 *SDG 6 scholarly publications, 2025-26*	**1.38** *Field-Weighted Citation Impact*	**61** *Publications with international collaboration*
2,512 *Total views across SDG 6 publications*	**537** *Total citations received*	**55%** *Share of internationally co-authored papers*

Recurring keyphrases across this body of work - including biochar, wastewater treatment, emerging contaminants, heavy metals, microalgae, pyrolysis, water scarcity and biological water treatment - point to a research programme concentrated on practical, technology-driven solutions for water treatment and contaminant removal.

Selected Publications of Direct SDG 6 Relevance

From the 112 publications recorded for 2025-26, the following are among the most directly relevant to clean water, sanitation and wastewater management on and around the University's own campus context:

Towards Net-Zero Campuses: Sustainable Solutions in University Sewage Treatment with HSFCW and Pseudomonas Actinomycetotermes (2026) - explores hybrid subsurface-flow constructed wetlands for university sewage treatment - research with direct application to campus-scale sewage systems such as SRM University-AP's own STPs.

Digital Twins as a Transformative Framework for Intelligent Water and Wastewater Management (2026) - examines how digital-twin technology can be used to monitor and optimise water and wastewater treatment operations in real time.

Balancing Safety and Sustainability: Sustainable Approaches to Reducing Disinfection By-Products in Drinking Water (2025) - reviews methods to minimise harmful by-products formed during drinking-water disinfection, balancing safety with sustainability.

Integrated Assessment of Fluoride Occurrence and Groundwater Usability: A Critical Concern for Drinking Water Sustainability (2025) - assesses fluoride contamination in groundwater and its implications for long-term drinking-water sustainability.

Harnessing Bio-Nano Hybrid Column for Sustainable Treatment of Reverse Osmosis Concentrate: A Decentralised Water Treatment Approach (2025) - proposes a decentralised treatment method for RO concentrate, a waste stream directly relevant to the University's own RO-based water-treatment operations.

Secured Smart Water Resource Management: An Incentive-Based Blockchain Use Case (2025) - presents a blockchain-based framework to secure and incentivise smarter, more accountable water-resource management.

Enhancing Access to Rainwater Harvesting in Regions with Saline Groundwater (2025) - investigates rainwater harvesting as a freshwater option for communities affected by saline groundwater, complementing the University's own rainwater-harvesting programme.

Water Withdrawal Trends Across Multiple UN Member Nations Using Time Series Forecasting (2026) - applies forecasting models to global water-withdrawal data, contributing to the evidence base for long-term water-resource planning.

Drinking Water Contamination by Microplastics in India: Comparative Analysis, Risk Assessment and Global Implications (2026) - evaluates microplastic contamination in Indian drinking water and its associated health-risk implications.

Arsenic Removal Technologies: From Challenges to Innovative Solutions (2025) - reviews emerging technologies for removing arsenic from water supplies, a persistent drinking-water-quality challenge in several regions of India.

CONCLUSION

From conserving and treating water on campus, to reusing it responsibly, safeguarding sanitation, and extending awareness through outreach, events and research - each strand reinforces sustainable water management at SRM University-AP.

Taken together, SRM University-AP's SDG 6 performance in 2025-26 reflects a campus that treats water as a resource to be managed end-to-end rather than simply supplied. Seven Water Treatment Plants and four Sewage Treatment Plants process hundreds of thousands of cubic metres of water every year; eleven rainwater-harvesting systems and a network of borewell-recharge structures work to replenish what is drawn from the ground; and greywater reuse, low-flow fixtures and dual-flush sanitation reduce demand at the point of use. Around 950 participant-instances engaged with SDG 6 through campus events in the past year alone, while six community outreach activities carried safe-water and hygiene practices into schools and neighbourhoods beyond the campus gate.

This operational commitment is matched by a growing research contribution - 111 SDG 6-aligned publications with meaningful international collaboration - that positions the University not only as a consumer of water-management best practice but as a contributor to it. As SRM University-AP's campus continues to grow, the priority going forward is to deepen this integration further: expanding treated-water reuse, strengthening groundwater recharge relative to withdrawal, and continuing to translate the University's research strength in water treatment into practice on its own campus and in the communities it serves.