

Shiv Nadar University Campus Water Management and Reuse Policy

6 CLEAN WATER AND SANITATION



Introduction

Water is one of the most essential requirements for the survival of all living organism including plants, animals and human-being. Recent trends of unexpected droughts, floods, and constantly depleting water tables are impacting basic survival.

To overcome this challenge, there is an immense necessity for focused planning and actions across nations and communities to conserve this most valuable natural resource.

Scope & Objective

The Water Conservation and Management policy reflects the intent and commitment of the leadership of the Shiv Nadar University (SNU) towards conservation of the natural resource and promoting knowledge and awareness amongst all its interested parties.

SNU is committed not only to provide good quality water to all members of including students, faculty, staff, visitors and local communities today, but also to motivate them to participate and engage in structured initiatives towards efficient usage, avoiding wastage, reuse of treated water, preventing pollution and overall conservation of the water leading to making SNU a water Neutral campus.

We, as a university aim to:

1. Conserve water and prevent its wastage
2. Ensure clean water availability through efficient water management practices
3. Sensitization of the campus population and the wider community about sustainability in water management
4. Conduct planning and execution activities focused on water conservation
5. Promote responsible water extraction
6. Have in place an efficient and documented water reuse system for sustainable water management.
7. Ensure preventive measure to prevention of contamination and pollution of the water systems present on campus.
8. Enhance knowledge and awareness of all interested parties on importance and methods of water conservation
9. Provide educational opportunities through formal education programs
10. Undertake outreach programs with the involvement of the students, faculty, and community to enhance the awareness of sustainable water management
11. Establish Rainwater harvesting infrastructure at campus and educate the community to establish the same at their village and community level
12. Provide knowledge support to NGOs who are interested to work on this important component of sustainable living

Shiv Nadar University Water Management and Reuse System

SNU undertakes to contribute to the cause of water conservation and ensure the availability of clean water through a variety of programs including:

1. Awareness and educational opportunities both on-campus and in the wider community
2. Knowledge sessions on Sustainable Water Management Practices
3. Consideration of sustainable water management in university operations
4. Outreach programs around ensuring clean water availability, sanitation, and conservation
5. General guidelines for water management
6. Promote and support research activities relating to water conservation



Awareness and Educational Opportunities

Shiv Nadar University is committed to increasing awareness of sustainable water management practices. We, as a university, urge our faculty, staff, and students to be aware and also reiterate their knowledge of good water management practices and sustainability.

Current opportunities provided by our universities are:

A. Courses

1. The undergraduate curriculum has a common core curriculum for all students, where Environment and Ecology is a mandatory theme for every SNU student.
2. Semester courses and optional courses on sustainable water management in various areas like agriculture, engineering processes, etc are available.
3. Certificate courses in water management
4. MSc in Water Science and Policy program

B. Awareness program

Several awareness programs are held for students, faculty, staff, third-party staff and the wider community around water conservation and preservation of natural resources.

1. Conferences are held around this area in different schools by the university as a body

2. Faculty development programs
3. Staff sensitization
4. Local community educational training
5. Talks and community sensitization programs

C. Awareness initiatives

1. Signs are present all over the campus to increase awareness about good water management practices
2. Signage is displayed near the natural and the artificial lake maintained at the university campus restricting any kind of act which might contaminate the water bodies maintained. Strict vigil is also maintained by the deployed security team to ensure no one pollutes the water bodies by throwing any garbage or enters the water body or disposes any kind of chemical in these lakes.
3. Water efficient agriculture practices are encouraged. Community is engaged and made aware of the benefits of Drip irrigation to be used for the cultivation of crops including Grains. Actual proof of the concept is also presented to the community by the faculty who undertook an initiative along with a global partner to grow grains using the drip irrigation process at the campus
4. Awareness programs on the importance of Hygiene and Sanitation is are also undertaken to sensitize the community and students
5. Clean drinking water is made available 24/7 on the campus through multiple dispensing stations for drinking and for cleaning purposes to ensure adequate hygiene and sanitation conditions are maintained across the campus.

Sustainable water management Practices

Water use and reuse system

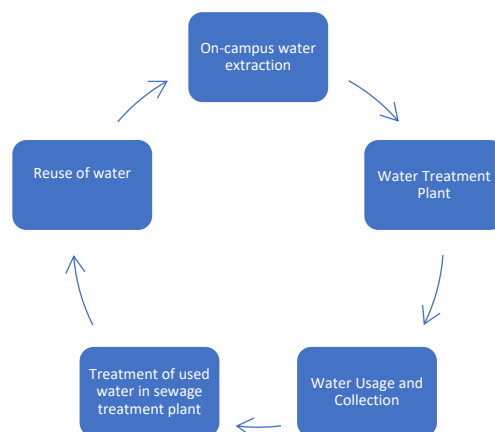


Figure 1 Process Overview

Process:

1. Water extraction
 - On-campus water extraction is done from borewells. Compliance is ensured with the daily extraction limit provided by Central Ground Water Authority (CGWA)

- In addition to the ground water, water is also collected through the Rainwater harvesting infrastructure installed on campus. Rain water is collected using the installed infrastructure of the university building for usage.
 - Chemical testing and analysis of the water is done to ensure that all relevant parameters are within the limit and the water is safe for the intended purpose.
2. Water Treatment Plant
 - A part of the treated water is directly supplied for domestic use in washrooms and for the cleaning activities
 - Another portion of the treated water is supplied to be further filtered and used for drinking
 - Chemical testing and analysis are done to ensure that all relevant parameters are within the acceptable limits.
 3. Water usage and collection
 - Signage is placed across the campus promoting conscious water usage
 - Water consumption is monitored and analysed for usage trend and identification of opportunities for further improvement.
 4. Treatment of used water in the sewage treatment plant
 - Water being treated is measured and records maintained.
 - Documentation of water usage and reuse is done for carbon footprint computation in Carbon Foot Print Data Sheet.
 5. Reuse of water
 - Water is currently being reused for horticulture purposes through tanks and pipes for irrigation
 - Measurement of reused water is done by recording the number of tanks sent for horticulture purposes and the amount of water being sent through pipes.

Water	Water from Bore well	233179 kl	
	Water from Municipal Water Supply	0	
	Water purchased from Tanker suppliers	0	
	Bottled water purchased	3050 Ltr	Academic and Non Academic= 5500 Bottle of 250 MI Cafeteria= 4040 Bottle of 250 MI 2385000MI 2385 Ltr Clubhouse= 359Ltr VH=306 Ltr
	Waste Water Treated	109899000 Ltr	
	Treated waste water consumption	109899000 Ltr	

Figure 2 Section of Carbon Foot print data sheet talking about water use and reuse measurement

Prevention of pollution of water systems

1. Considering the importance of maintaining the quality and safety of the water, processes and controls are deployed to ensure prevention of the water leakage from the pipelines.
2. All water pipes are placed in separate Concrete Trenches which do not allow infiltration of water from any other source to avoid any contamination by any other source of water
3. The water pipelines are sealed and are reviewed at periodic intervals to identify any possible leakage or change of any cross contamination

4. Pressure differential gauges are installed to detect any possible leakage and Regular preventive maintenance is undertaken to prevent any leakage into the ground or contamination of the water system present on campus.
5. Throwing of garbage or any contaminating material on the ground or lake is strictly prohibited in the university and monitoring is done near the lake system through guards and the CCTV surveillance to ensure compliance with the same. In addition, signages are present on campus to prevent contamination of ground or water systems on the campus.

PLANNING AND DEVELOPMENT PROCESSES

1. Water efficiency renovations, building designs, and upgradation

1.1 Infrastructure

- 1.1.1 All washrooms are equipped with press-Matic taps that regulate water flow to prevent the wastage of water.
- 1.1.2 Rainwater harvesting system is installed campus-wide in all the buildings. Stormwater drainage systems are present near pavements and rainwater harvesting systems are present in buildings as well, then the water is filtered and released into an artificial lake and a natural lake.
- 1.1.3 The university is IGBC LEED certified with processes to conserve water and increase water efficiency in place. One of the key areas of IGBC green homes is water efficiency. In addition, the upgradation of the building is planned with an increase in measures and upgrades centered around environmental protection including water efficiency measures.
- 1.1.4 Water-saving process during development:
 - 1.1.4.1 During the construction process, **it is ensured that only the minimum amount of water is used.**
 - 1.1.4.2 Hessian Cloth/Gunny Bag Usage For Water Curing which helps in reduction in usage of potable water.
- 1.1.5 Water Conscious planting
We are committed to the conservation of water by plantation of drought-tolerant plants on the campus. As a result, irrigation requirements are reduced and at the same time, a green campus is also ensured.
Some of our **drought-tolerant** species planted across the campus are Acacia auriculiformis A.Cunn. ex Benth., Albizia lebbeck (L.) Benth., Casuarina equisetifolia L., etc.
SNU is home to wonderfully rich biodiversity. We monitor and conserve our biodiversity and ensure the protection of the same. There is a biodiversity park on campus and several research activities and events are done revolving around the conservation, promotion, and recording of biodiversity.

1.2 Maintenance

- 1.2.1 All washrooms and taps are maintained regularly to prevent water wastage.

- 1.2.2 QR Codes are present in hostel and washroom facilities for students and staff to scan the codes and mention their complaints or report any issue in the washrooms.
- 1.2.3 Housekeeping: All staff responsible for cleaning are trained to use only the necessary amount of water for cleaning or maintenance purposes.