

# Warith Al-Anbiyaa's Water Consumption Report

## Year: 2022

University of Warith Al-Anbiyaa is located in Karbala, Iraq, an arid region. Due to climate change and being originally from a desert-based area, the University of Warith Al-Anbiyaa does not have groundwater reserves inside its premises, University purchases untreated lake/ground water and treats it at on-campus filtering plants. The university has two water treatment plants, their details are given below,

**1: Treatment 1 for Human Consumption:** One of the two treatment plants is for treating lake/ground water into safe enough water for human consumption, this water is used in toilets, and the same water is then again filtered for drinking purposes

**2: Treatment 2 for Plants Irrigation:** The other treatment plant is for treating water from sewerages to recycle it for irrigation purposes, and for watering university lawns, trees, and plants.

## Annual Water Consumption

**Population:** 5200

**Water Tank Size:**  $14.4 * 14.4 * 4.8 = 995.328$

**Filled Days/year:** 203 Days approx

**Water Consumed/Year:**  $995.32 * (203 \text{ days approx}) = 201248 \text{ to } 202050 \text{ meter cube}$

## Water Conservation On-Campus

**Toilet type:** Flush-less toilets

**Irrigation:** From recycled sewerage water

**Saving Water:** Smart Irrigation system, sensors in the soil, which assess the water requirement of plants from soil and then water them accordingly, an automatic mechanism, this way we are

using minimum water possibly required for irrigation purposes.

**Drought-Resistant Plantations:** We are planting drought-resistant plantations and trees that have little to no need for daily irrigation, in an order to save more water daily

Water Absorption: Most of the land is soil-based for absorbing rain waters, this includes lawns, nursery areas, and newly bought land for university.

### **Conclusion:**

The university's estimated annual water consumption is *201248 to 202050-meter cube*, which is relatively low for a population of 5200 people. This is due to the university's water conservation efforts, such as flush-less toilets, recycling sewerage water for irrigation, smart watering systems

### **Recommendations:**

The university can also explore opportunities to collect and use rainwater for non-potable purposes, such as watering landscaping and flushing toilets.