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Utilities Water Reclamation

The University of Cincinnati uses as much as 500 million gallons of water at its Clifton campus annually. Currently, the only supply source for this water is the Greater Cincinnati Water Works (GCWW). The greatest amount of this water supply as well as stormwater which is collected on campus all becomes wastewater as it leaves campus, and only through Metropolitan Sewer District (MSD) piping.

UC Utilities is the largest single user of water on the UC campus, using over 70 million gallons of potable water at its two on campus utility plants, and discharging the majority of this water into the MSD systems for treatment before being discharged into the Ohio River.

This water need coupled with the treatment requirements of leaving campus results in energy requirements is excess of one thousand tons of CO2 released into the environment annually, plus a significant cost to the University.

Water reclamation is best defined as the "processing or treatment of wastewater in order to make it reusable". UC Utilities has developed and installed a means to collect process water that would otherwise be sent to the sewer system for ultimate treatment by MSD before being released into the environment. Currently all once through cooling water at the Central Utility Plant is being collected and processed for reuse by the installed system, and is projected to remove over 5 million gallons of water requiring front and back end treatment by GCWW and MSD. This alone is reducing CO2 required emissions by 70 tons annually. As plant water demands increase with the warmer temperatures in spring and summer this system is capable of reducing not only 300 tons of CO2 from emissions but as well over $100,000 in water treatment costs to the University. Utilities plans to gradually extend the capability of this system to collect and process close to 70% of its roughly 30-40 million gallons of domestic water requirements.

At its East Utility Plant on east campus, this same system is under construction currently, and expected to be operational by summer 2023. This system will ultimately collect and process as much as 60% of this plant's 25-30 million gallons of water demand.

In parallel Utilities is working with the College of Engineering and Applied Science to collect stormwater and send it back to both plants on campus for process and reuse. The first system is expected to be operational by the spring of 2024, and is expected to reduce campus GCWW domestic water requirements by 10 million gallons annually.

In total Utilities is on track to reduce its domestic water costs by over $100,000 annually and reduce the CO2 emissions associated by at least 250 tons annually.