

# One Billion Gallon Water Challenge Update



## UNIVERSITY WATER CONSERVATION PROGRAM



ISTC launched its One Billion Gallon Water Challenge in 2014 to promote water conservation measures by businesses, industries, communities, and the general public in Illinois.

ISTC has made a commitment to fund projects and conduct field-based research with industries, municipalities, and universities that result in measurable and meaningful water savings. We are currently funding projects with the following partners: Carus Corporation, American Water, Loyola University, City of Urbana, Illinois State Water Survey, and the Illinois Green Economy Network.

### LOYOLA UNIVERSITY CHICAGO



Loyola University Chicago is a private university founded in 1870.

Loyola maintains four campuses internationally, serving 15,902 undergraduate and graduate students and employing more than 4,000 faculty and staff members. Their main residential and

undergraduate campus is the Lake Shore Campus, which has a population of 3,000 students. Loyola's commitment to environmental sustainability is particularly evident on this campus, where four of their five LEED-certified buildings are located along with facilities for aquaponics, biodiesel, and geothermal research. Water for the Lake Shore Campus comes from Lake Michigan. Due to a U.S. Supreme Court decree, the amount of water that can be withdrawn per year from the lake is restricted. The metropolitan population relying on that water has steadily increased over the years, driving water costs up and making the need for water and cost saving measures more apparent. The University evaluated opportunities for water savings on the Lake Shore Campus through a combination of programs including retrofits, behavior change campaigns, and incentive programs.

### RESIDENCE HALL RETROFITS

The project team has been implementing a series of retrofits to improve water conservation. They have identified dual flush toilets, sink aerators, and low-flow shower heads as opportunities for water savings. A pilot test of a dual flush conversion system for their toilets was conducted to ensure that they operate as expected. Dual flush toilets allow for less water to be used to dispose of liquid waste but still provide the needed volume to dispose of solid waste. Once a suitable product was successfully identified, Loyola installed a total of 58 dual flush conversion kits within their buildings and identified 185 more opportunities to use this water-saving measure. They continue to collect water consumption data to compare water use with and without the retrofits.



### LESSONS LEARNED

- ⚠️ Coordinating with various departments and service providers can be one of the most challenging aspects of installing water efficient fixtures at a university.
- ⚠️ Be open to the project expanding beyond the initially targeted buildings, especially if you have difficulties with implementation in those buildings.
- ⚠️ It is difficult to schedule retrofits in buildings that are operated year-round. Retrofit projects should be scheduled when the students are not attending classes to give campus facilities staff more time to complete the projects because there are fewer urgent day-to-day operations issues to address.
- ⚠️ Be prepared for delays. Finding the right equipment for some projects can be difficult.
  - Re-circulating pumps seemed to be a simple solution for conserving water in a chemistry lab, but finding the model that meets the needs of the lab has been more challenging than expected.
  - Dual flush conversion kits do not fit all toilets. In some situations, the toilet may have to be completely changed out.
- ⚠️ Student interns have been enthusiastic to work on this project to help each other and Loyola University save water.
- ⚠️ Feedback indicates that students were more responsive to posters that depicted social norms, painted a vivid picture of water consumption, included humor, and used a popular campus personality as a spokesperson.
- ⚠️ Students did not seem very motivated to collect a \$3 gift card in return for filling out a water conservation survey. The incentive for taking the end-of-semester survey will be increased to \$5 and will be changed to an electronic gift card to simplify interaction with the students.

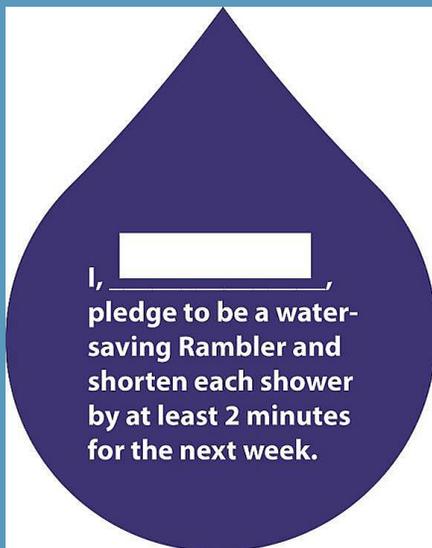


## EXAMPLES OF WATER CONSERVATION CAMPAIGN POSTERS

**Turn OFF the water  
while you brush your fangs.**



*and Sister Jean*  
**Lake Michigan will thank you.**



**If Tivo can shorten  
his shower  
by 2 minutes,**



**you can too!**



## LAB RETROFITS

Water-driven aspirators are commonly used in organic chemistry laboratories to create a vacuum. Typically, the water is used in a once-through manner making it a major source of water consumption in the laboratory. The existing once-through system is being converted to a system of recirculating pumps and water reservoirs. The anticipated savings is 50,000 gallons per year for each lab that converts to the new system.



## CAMPUS WATER CONSERVATION CAMPAIGN

The project team collaborated with the Psychology department to design a multifaceted program aimed at changing student behaviors and attitudes toward water conservation. Behavior change efforts were designed to be spearheaded by student leaders instead of University faculty or staff; to be engaging and interactive; and to involve prizes. Residence halls were selected to participate in the behavioral campaign alone or in combination with retrofit installations.



Water conservation was marketed through gift bags that included messages promoting water conservation and soliciting personal pledges. Student pledges to shorten shower times were prominently displayed at the entrances to the resident hall to serve as reinforcement and to support the message that water conservation is a collective effort.

Educational events created an opportunity for students to discuss what water means to them compared to people around the world. Student interns distributed surveys within the residence halls to compare student attitudes toward water conservation before and after the educational and marketing efforts. Gift cards were distributed in exchange for a completed survey to encourage student participation.



Students seemed to respond more to the humorous posters and their favorites featured photos of Sister Jean, campus chaplain and local celebrity, urging them to reduce water.

This project is ongoing. The final report and results measuring water reduction will be available soon.



For additional project details or to find out how you can participate in the One Billion Gallon Water Challenge contact:

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**For other case studies visit: <http://www.istc.illinois.edu/water.cfm>**