

Slow The Flow And Save Water: Implementing Water Conservation on Residential College Campuses

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Introduction

Water is an essential part of life, economic well-being, and environmental integrity. Freshwater is vastly used daily for drinking, food production, personal hygiene, energy and productions of goods. Consequently, humans have proven to be inefficient water users. Concentrating in the United States, college institutions and college students have shown to be inefficient water users by consuming a significant amount of water. It is important to target college students because students 17 to 24 years of age typically consume more water per capita than children and adults over 25 (See Figure 1). Residential colleges are using significant amount of water for landscaping and in dormitories. This is unfortunate due to the limited source of freshwater in the world. 70 percent of the world is covered by water, however out of 70 percent, only 2.5 percent is available for freshwater. Water is a precious source that college institutions and college students must evaluate their water usages.

How can colleges and college students reduce their usages and implement water conservation? **An ideal way to manage water is implementing water conservation regulations on residential college campuses by (1) alternating landscaping, (2) investing in fixture technologies and (3) changing personal behaviors through education focused on how to implement water conservation into an individual's daily life by overcoming cost and human behaviors on water (See Table 1).**

Research Methods

This research used scholarly journals, articles, books and case studies on Minnesota colleges and examine how colleges have overcome the obstacles of cost, personal behavior and attitudes on water conservation. This research also collected data from EPA, Watersense and scholarly journals and articles to examine water usage per person and water usage of water conservation methods.

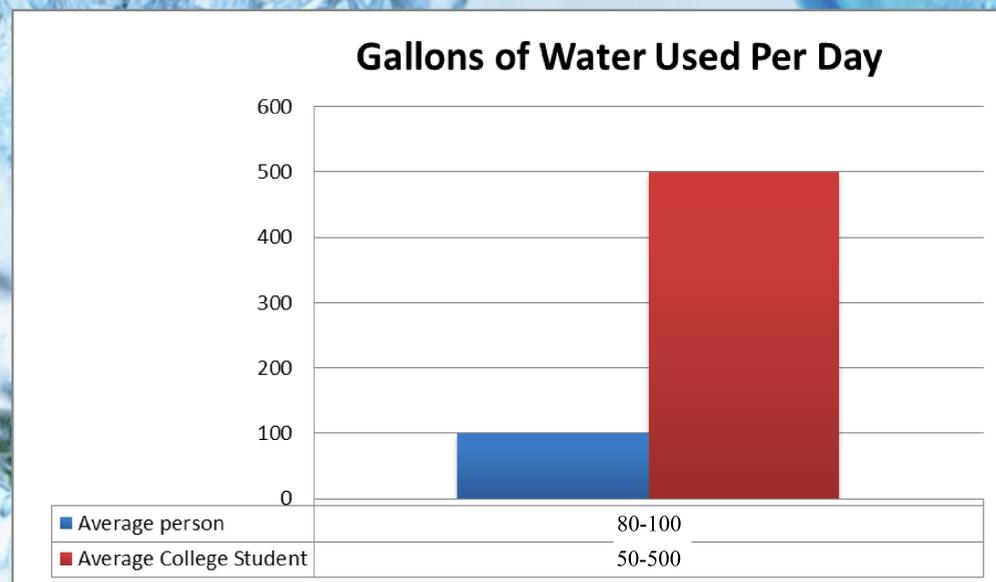


Figure 1. Illustrates how much gallons of water is used per day from an average person in the U.S. and an average college.

Water Use on Campus	Inefficient	Efficient	Total Water Saved	Other practices
Landscaping 	Sprinklers: 3 to 10 gallons per minute	Efficient Sprinklers runs 1-3 gallons per minute	9,000 gallons annually	Water mid-day. Monitor water
Showerhead 	7 gallons per minute	Low Flow Showerheads: 2.2 gallons per minute	4 million gallons of water a school year.	Shorter showers
Washing Machines 	27-55 gallons per load	Efficient washers: less than 27 gallons per load	20 billion gallons of water	Wash full loads only
Toilets 	6 gallons per flush	1 gallons per flush	640 billion gallons of water per year	Don't flush trash, hair
Faucets 	3 gallons per minute	Low Flow Faucets: 2 to 2.5 gallons per minute	500 gallons annually	Turn off when not in use.

Table 1 compares inefficient technologies fixtures from efficient fixtures and how much water can be saved. This table also illustrates other practices to save water.

Conclusion:

The barrier for college campuses to sustain water usage includes cost, unwilling to change in culture and unappealing to future incoming students. This conservation can be unappealing to incoming students such as having less grass or lower volume showers. A slight change in students' lives can drastically change their lives. In which, students may not be in favor of water conservation implementation. Water conservation on campus can also be costly. Installing and removing can cost up to \$60,000. Overall, investing into education, alternating landscaping and technologies fixtures may be costly, however, they are important key to implement water conservation on campus. University of Minnesota Twin Cities and College of Saint Benedict have overcome the barriers of student behavior to implement water conservation.

University of Minnesota Twin Cities: Have installed many technologies fixtures to reduce and educate students about water conservation.

College Saint Benedict: Have overcome the barriers of student behavior on water conservation by educating students that going tray-less will reduce food waste and water waste.