

Sustainability 2020 Committee Project Proposal Abstract
Water Fixture Upgrades, April 2017

Project Description – The project scope replaces existing faucets and showerheads in campus buildings with high-efficiency, low-flow water fixtures. (Even though some fixtures have been replaced in the past, current low-flow fixtures use even less water.) Housing will be funding their own replacements of 6,821 fixtures. So while this proposal covers funding for the non-Housing UPC buildings only, it will address the water conservation effort as a whole. Replaced fixtures in both housing and UPC buildings will help the University exceed its conservation goal of 10% reduction in water use by 2017. Approximately 1,194 fixtures have been selected for this project based on a ROI of +/- 15 years or less. Construction is projected to take about 1 year. Facilities Management Services, Housing, Radisson and Auxiliary Services were all consulted and are in support of this project. The fixtures to be replaced are as follows:

Location	Type	Quantity
On Campus Housing	Aerators for faucets	4,451
On Campus Housing	Lavatory Faucets	450
On Campus Housing	Showerheads	1,500
Off Campus Housing	Toilets	420
	TOTAL	6,821
UPC Buildings	Lavatory faucets	1,148
UPC Buildings	Showerheads	46
	TOTAL	1,194

Objectives

Goal #1 of the water conservation subcommittee is to reduce water usage 10% by 2017. The Office of Sustainability, in coordination with American Standard, performed a fixture audit for the UPC buildings. FMS, USC Housing, and Radisson staff further analyzed the audit data and determined a potential water savings of 42 million gallons per year (approximately 19%) by replacing 8,015 existing fixtures to high efficiency faucets, toilets and showerheads.

Benchmarks

- USC – USC Housing has installed low-flow showerheads and aerators that use 25% less water. Housing has also installed dual-flush toilets in 78% of the eligible units. The toilets alone are estimated to save 139,000 gallons of water per year. Five minute shower timers were provided to all on campus apartments and suite style residence halls resulting in a 20-30% decrease in water usage from 2014.
- UC Berkeley – According to Berkeley’s 2013 Water Action Plan, phase one of the 2008 Clark Kerr Campus renovation project saw a 40% reduction in water consumption

between 2003-2013 due in part to the implementation of dual flush toilets, 0.5 gpm bathroom faucets, 1.5 gpm showerheads and 1.5 gpm kitchen faucets in the dorms.

- Stanford – In 2001, Stanford began retrofitting 13,000 water fixtures and decreased their water use from 2.7 million gallons per day (mgd) from 2000-2001 to 1.89 mgd (30%) from 2014-2015.
- Harvard – According to Harvard’s website, the 2008 McCulloch Hall renovation project replaced existing bathroom fixtures with high efficiency fixtures, leading to a reduction in domestic water consumption by an estimated 31%. In 2009-2010, Harvard’s Faculty of Arts and Sciences installed low-flow 0.5 gpm aerators on 900 faucets and replaced 675 toilets with dual-flush toilets, which saved 0.5 gpf. As of FY15, Harvard reported an overall campus reduction of water usage of 19% from a 2006 baseline.

Risks – None