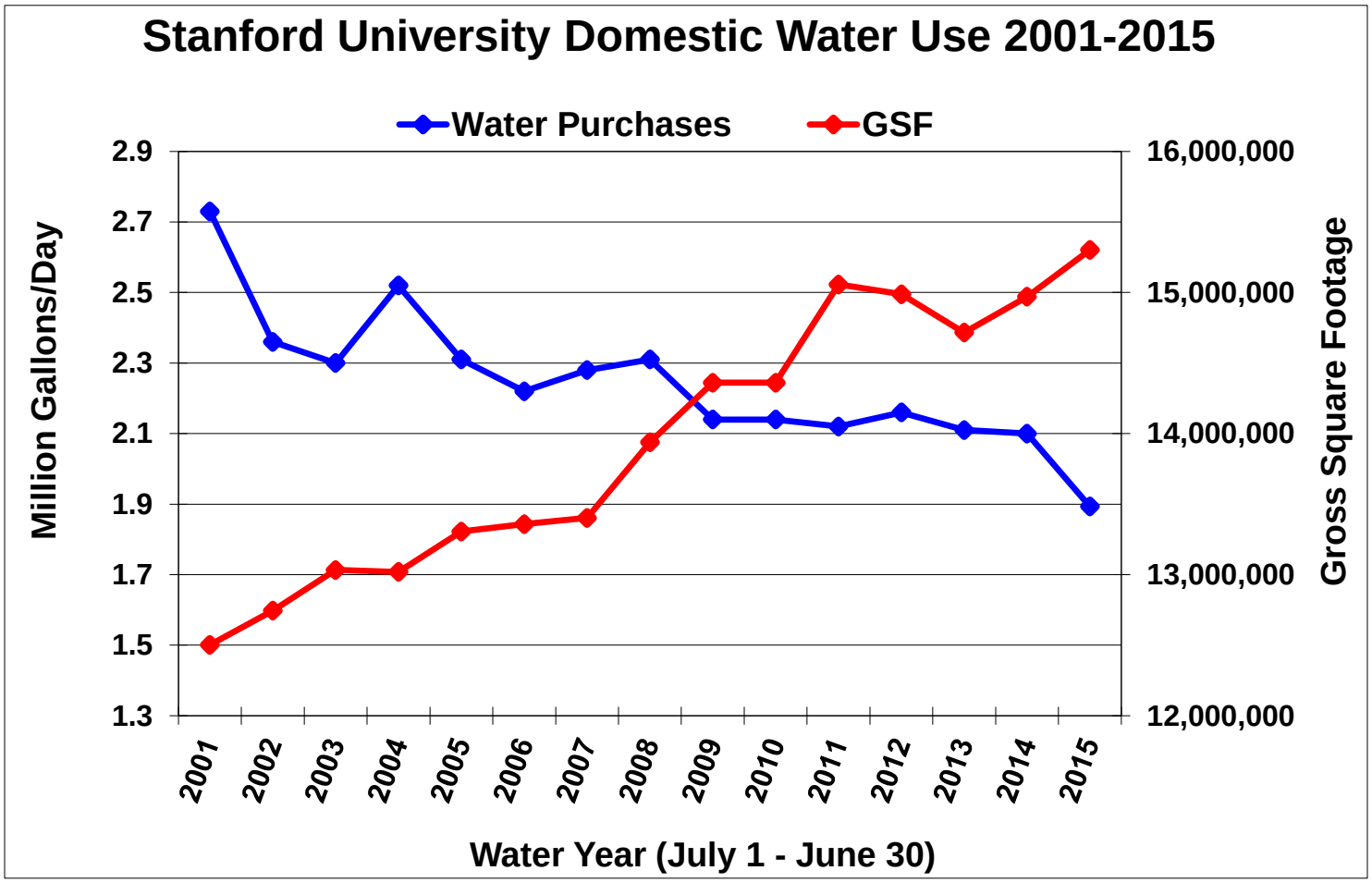
STANFORD UNIVERSITY
WATER EFFICIENCY PROGRAM
FACT SHEET
suwater.stanford.edu

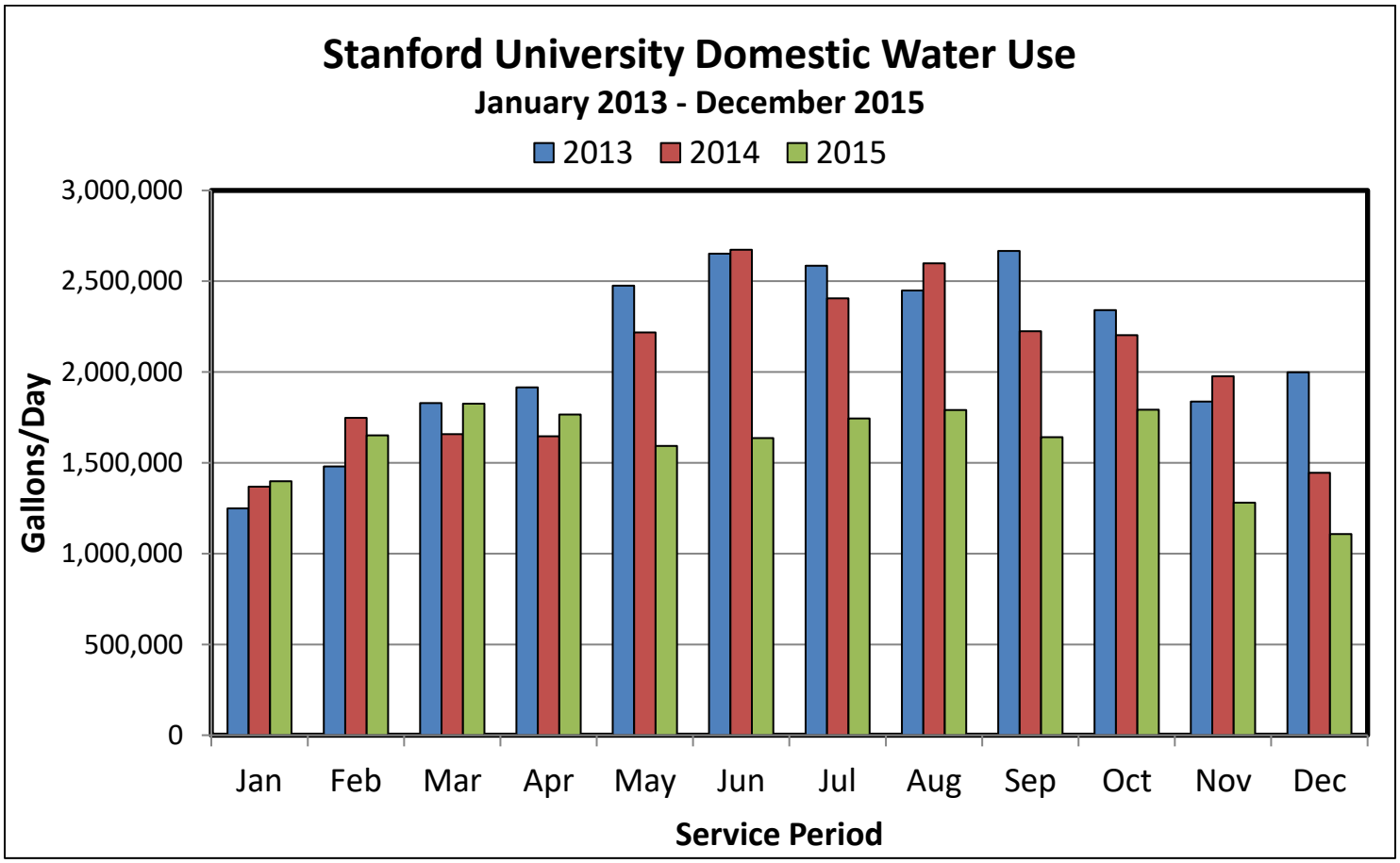
Background

In 2001, Stanford University (SU) developed the *Water Conservation, Reuse and Recycling Master Plan* to identify ways to keep water demand below the current San Francisco Public Utilities Commission (SFPUC) allocation of 3.033 million gallons per day (mgd). The success of Stanford's Water Conservation and Efficiency Program is demonstrated by decreased domestic water use **from 2.7 mgd in 2001 to 1.9 mgd in 2015,** despite more than 2.5 million square feet of new campus facilities added. See next page for domestic water use graph, showing 12 month and long-term trends.

FY 2001-FY2015 Key Water Conservation Accomplishments

- Residential & Dining Enterprises (R&DE) converted 90 irrigation controllers to centrally controlled weather-based models, installed 70 flow sensors and 70 master valves, and replaced over 20,000 sprinkler heads and nozzles. R&DE completed their project in July 2015 and reduced their water use by 46% in 2015, which was over 33 million gallons of water saved.
- Gilbert Hall reduced their water consumption by replacing their outdated water misers (devices that monitor the steam condensate temperature and apply cold water only when needed, as opposed to continuous flow). Gilbert Hall reduced their water consumption by over 70% during the first year that the water misers were installed, or over 2.5 million gallons. Water misers have been installed on almost all campus steam sterilizers.
- Stanford Utilities conducted a pilot study from 2011 - 2013 on Advanced Metering Infrastructure (AMI) which showed real-time, daily water consumption information.
- Stanford University Utilities worked with R&DE and PG&E's Food Service Technology Center (FSTC) to track real-time water and energy use of the commercial dishwasher at Wilbur Dining Hall. A new dishwasher was installed in early 2015 and a comparison was made of the old vs. new dishwasher.
- In June 2015, Stanford's Water Efficiency group completed a pilot study with with on-campus residents and OnPoint EcoSystems to test new WiFi weather-based irrigation controllers and determine what residential water savings are available from weather-based irrigation controllers. Participants saved an average of 27% of their water use (50% more than non-participants saved from other conservation efforts in response to drought).
- In 2014, SU held the Student Water Efficiency & Innovation Film Competition to increase water efficiency and use mindfulness.
- Replaced large washing equipment with new water-efficient and energy-efficient equipment in two buildings in the School of Medicine in 2012. Also installed a Reverse Osmosis (RO) wastewater reuse system making it the first project on campus to reuse RO wastewater.
- Avery Aquatic Center retrofitted four column showers to efficient models with showerheads that use 1.5 gpm.
- Replaced more than 13,000 academic and student housing bathroom fixtures with water-efficient alternatives, including low-flow showerheads, sink aerators, high efficiency toilets and urinals. More than 95% of the academic and student housing inefficient toilets have been retrofitted.
- Created Water Efficiency Goals & Benchmarks for new buildings and major retrofits. lbre.stanford.edu/sem/publications/performance-goals-water-efficient-equipment-new-or-renovated-stanford-university
- Majority of Campus Grounds and Landscaping are on weather-based irrigation controllers.
- Since May 2008, SU has provided over 360 rebates to Faculty/Staff for installing high efficiency toilets or clothes washers and over 200 water wise site inspections.
- In 2012, SU worked with School of Medicine to install 6 weather based controllers which saved a total of 1.5 million gallons of water during the 6 month pilot study.
- From 2011 to 2013 installed real-time water metering devices on existing meters as part of a pilot study. Implemented BMPs to ensure new landscaping and buildings are working efficiently. Real-time monitoring has also improved responsiveness to leaks and reduced the amount of time that leaks go unnoticed.
- From 2010-2011, replaced two single pass water seal vacuum pumps and an air compressor at the School of Medicine with new efficient equipment.
- Developed a water-efficient technology demonstration program to test new technology.
- Installed a WaterWise Demonstration Garden. suwater.stanford.edu/water-wise-garden
- All once-through cooling for equipment has been replaced with re-circulating systems.
- Several large campus lawn removal projects have been completed since 2001.


Stanford University Domestic Water Use 2001-2015
Water Purchases
GSF
Million Gallons/Day
Gross Square Footage
2.9
2.7
2.5
2.3
2.1
1.9
1.7
1.5
1.3
16,000,000
15,000,000
14,000,000
13,000,000
12,000,000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
Water Year (July 1 - June 30)


Stanford University Domestic Water Use
January 2013 - December 2015
2013
2014
2015
Gallons/Day
3,000,000
2,500,000
2,000,000
1,500,000
1,000,000
500,000
0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Service Period