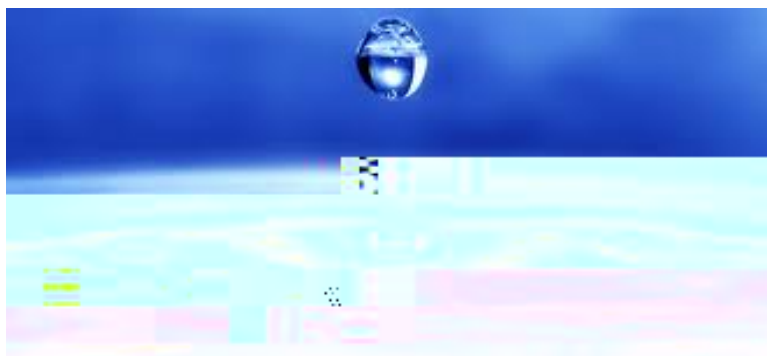


**CALIFORNIA STATE UNIVERSITY
LONG BEACH**

WATER ACTION PLAN

July 2014



CSULB WATER ACTION PLAN

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CALIFORNIA STATE UNIVERSITY LONG BEACH

WATER ACTION PLAN

BACKGROUND

In response to Governor Brown's declaration of a State of Emergency on water due to severe drought conditions, CSU Interim Vice Chancellor Sally Roush issued a system wide memorandum asking all CSU campuses to reduce water usage in all possible areas. CSULB acknowledges this urgent call to action and will take the necessary steps to help achieve the 20 percent water use reduction goal.

CSULB has been implementing water conservation projects as part of the campus overall sustainability goals including transitioning to drought tolerant landscaping, converting landscape areas to drip irrigation, use of waterless and low flow urinals, installing touch free automatic faucets with low flow restrictors, installing weather based central irrigation controllers, and using reclaimed water for irrigation. CSULB plans to continue these efforts and will actively search for new opportunities to conserve precious water resources.

CAMPUS WATER USE

Water is a precious natural resource that is vital to campus life and operations. Water is used to support many campus functions and operations. Water is used to heat and cool buildings, water is a conveyance for cleaning and sanitary activities, it provides the necessary source of nourishment to keep campus landscape lush and green, water support academic activities and research and most of all, water for drinking is a basic source of nourishment for life on campus.

CSULB consumes on average about 25 million cubic feet of water each year which is equivalent to 187 million gallons of potable and reclaimed water use annually. To put this in perspective, the campus consumes enough water every year to fill nearly 300 Olympic size swimming pools. The total cost to provide this water to the campus is \$660,000 per year and is projected to continue to rise over the next several years. Water has many uses on campus but a few systems consume the most. Major water consuming systems on campus include the following:

1. Landscape Irrigation
2. Central Plant (Heating and Air Conditioning)
3. Domestic Water Use
4. Dining Services
5. Swimming Pools

WATER CONSERVATION AND EFFICIENCY GOAL

CSULB is committed to sustainability in all operations including the use of natural resources such as water. The campus aims to reduce water use as much as possible and use water resources wisely and efficiently in all campus operations. CSULB will endeavor to achieve the target water reduction goal 20 percent by implementing the following Water Action Plan. The Physical Planning and Facilities Management department will take the campus lead in coordinating and implementing the plan.

CSULB WATER ACTION PLAN

1. Perform a comprehensive water use audit.
2. Adopt and implement applicable best manage

Identify as Completed(1), Planned(2), or Requested(3)	Priority	Campus	Main Categories				SubCategories			Title	Description	Cost Estimate	Water Saving Estimate (CCF)	Annual Cost Savings (\$)
			I/I	D/M	E/R	ADA	Seismic	F/L/S	Water Conservation					
1	1				X				X	Install low flow urinals	Install (221) 0.25 GPF urinals campuswide	\$ 151,457	7386	\$ 21,419
3	1				X				X	Install low flow urinals	Replace standard urinals with 0.25 GPF urinals			
									2	1		X		
									3	1		X		
											Convert central plant cooling tower potable water source to reclaimed water service	\$ 413,000		\$ 35,000
3	2				X				X	Replace swimming pool covers Kinesiology	Replace swimming pool covers and mechanical reels	\$ 65,000	590	\$ 1,711
3	1				X				X	Remove steam boilers and install sterilizers	Remove existing steam boilers and install electric point of use sterilizers	\$ 30,000	240	\$ 696
3	1								X	Transition to water recovery and recycling pressure washing system	Eliminate direct water pressure washing of sidewalks and driveways and transition to recovery/recycling process and system	TBD	TBD	TBD
2	1								X	Housing Water Conservation Project 2014	Retrofit toilets and install water saving showerheads and faucet aerators in (80) bathrooms	\$ 18,000	2274	\$ 6,595
3	2								X	Xeros Bead Laundry System Pilot Project	Replace one standard commercial washer with Xero polymer bead laundry system for on-site testing	\$ 12,000	1843	\$ 12,185
3	1								X	Install Weather Based Irrigation Controller/ Stations	Convert standard irrigation time clock to weather based controller/station	TBD	TBD	TBD
2	2								X	Convert Spray Irrigation to Drip Irrigation, Central Plant Planters	Convert Spray Irrigation to Drip Irrigation, Central Plant Planters	\$ 10,500	414	\$ 1,201
1	2								X	Convert Lawn to Drought Tolerant Ground Cover Parking Structure 1 North	Convert existing lawn to drought tolerant ground cover and install drip irrigation	\$ 5,000	54	\$ 157
1	2								X	Convert Lawn to Drought Tolerant Ground Cover Parking Office North	Convert existing lawn to drought tolerant ground cover and install drip irrigation r multiple campus location	\$ 10,000	74	\$ 215
3	2								X	Convert Lawn to Drought Tolerant Ground Cover Student Health Center	Convert existing lawn to drought tolerant ground cover and install drip irrigation r multiple campus location	TBD	365	\$ 1,059
3	2								X	Conduct Feasibility Study To Convert Lawn to Drought Tolerant Ground Cover Campuswide (SWA)	The Feasibility study will identify potential lawn areas that are best candidates to convert to drought tolerant landscape consistent with the Landscape Master Plan.	TBD	TBD	TBD

low flow toilets
Replace water filtration system at Japanese Garden
Convert central plant cooling tower to reclaimed water service
Replace all 3 GPR toilets to 1.28 GPF wide
Replace existing sand filters with efficient bio mechanical filters to backwash cycles

Best Management Practices for Water Use in CA State Government Facilities

Dept. & Facility Name: CALIFORNIA STATE UNIVERSITY, LONG BEACH

Date:

7/1/2014

Activity	Water Management and Conservation Best Practice	Current practice	New practice	Evaluate	Not applicable
0.1	Verify preventative maintenance schedules and work order requests are current for all water related systems identified in this list (be prepared to report on all deferred activities or outstanding repairs)	X			
0.2	Coordinate water use inspections and maintenance with regular facility inspections/preventative maintenance activities. Accelerate activities only as required to meet the goals of this Water Use Best Practices check list	X			
0.3	Coordinate water inspections and maintenance with regular facility inspections and preventative maintenance activities	X			
0.4	Identify, modify or establish procedures to minimize or eliminate non-essential water use	X			
	Examples:	X			
	Turn off water to unused facility areas	X			
	Limit building wash-downs, use wipe-downs instead of wash-downs	X			
	Sweep instead of mopping, wash-downs, or pressure washing			X	
0.5	Contact local water utility for rebates and assistance on water saving audits and equipment	X			
1					
1.1	Create a written water management and conservation policy statement addressed to staff that addresses short term water conservation goals and a commitment to the longer term water management efficiency of the facility		X		
1.2	Publicize the water management and conservation policy statement to staff and facility occupants		X		
1.3	Establish procedures to record the facility water meters on a monthly basis or more	X			

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Date:

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Activity	Water Management and Conservation Best Practice	Current practice	New practice	Evaluate	Not applicable
4.5	Provide education for sustainable and environmentally friendly landscape practices	X			
4.6	Use water moisture probes to a depth of at least 3" to determine watering needs or planting areas			X	
4.7	Establish a soil management plan to reduce runoff, eliminate the need for chemicals, and encourage healthy plant growth. The soil management plan should include an analysis of soil health including biological assays and soil probing to determine compaction			X	
4.8	Identify, modify or establish procedures to apply organic fertilizers around the root zone or base of the plant. Fertilizers should be applied only upon individual plant needs or soil test results				
4.9	Identify existing plant types and maintain a log of plant replacement. Use drought-tolerant, fire-resistant, native plants	X			
4.10	When planting large trees and shrubs, limit individual species to no more than 10% of the area total to reduce the risk of catastrophic losses to diseases or pests	X			
4.11	Implement a regular maintenance schedule that includes regular inspections, adjustments and repairs of irrigation systems and its components and replenishing mulch and removing obstructions to irrigation emission devices	X			
4.12	Implement storm water management practices to minimize runoff and increase on-site retention and infiltration of water	X			
5					
5.1	Check for leaks in the primary irrigation system valves and distribution lines	X			
5.2	Identify the location of all leaks and record relative severity (serious or minor)				
5.3	Repair all leaks, otherwise cap off or close any temporarily unrepairable breaks or significant leaks at the closest location. Irrigate affected landscape areas sparingly with a hose until leak is repaired	X			
5.4	Inspect sprinkler and drip irrigation head functions. Identify and repair poor performing or broken sprinkler heads. Use replacement irrigation heads that have uniform distribution rates for the same irrigation zones, unless otherwise directed by the manufacturer's specifications	X			
5.5	Adjust system to minimum specified pressure. Install pressure regulators where required	X			
5.6	Verify that automatic irrigation controls and timers functioning correctly. Irrigation watering windows shall meet, and not exceed Department of Water Resources best management practice recommendations	X			
5.7	Verify irrigation schedules are appropriate for time of day, climate, soil conditions, plant materials, grading and season	X			
5.8	Verify irrigation schedules are appropriate for time of day, climate, soil conditions, plant materials, grading and season	X			

Best Management Practices for Water Use in CA State Government Facilities

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Activity	Water Management and Conservation Best Practice	Current practice	New practice	Evaluate	Not applicable
5.15	Provide education for the management of landscape irrigation	X			
5.16	Install irrigation water meters and master valves			X	
5.17	Upgrade existing irrigation controllers with weather-based irrigation controllers that use onsite weather stations or free weather base evapotranspiration web data	X			
	Maintain planting and irrigation record drawings for baseline information and submit a copy to Agency/Department and landscape architect (these records help identify areas in need of water conservation improvements)			X	
5.18	Identify and modify manually operated irrigation valves to automated valves			X	
5.19	Identify planter areas that experience runoff and adjust irrigation to prevent runoff. Install check valves or anti-drain valves to hold water in the system to prevent drainage from sprinkler heads when the system is off	X			
5.20	Turn off water fountains and establish maintenance procedures for existing pumps and equipment			X	
5.21	Inspect and maintain backflow prevention devices	X			
5.22					
6					
6.1	Adjust fixtures to use the minimum amount of water required for proper function	X			
6.2	Replace broken fixtures with low-flow water conserving fixtures	X			
6.3	Repair leaking toilets	X			

Best Management Practices for Water Use in CA State Government Facilities

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7/1/2014

Activity	Water Management and Conservation Best Practice	Current practice	New practice	Evaluate	Not applicable
11.6	Identify, modify or establish procedures to reuse final rinse water for garbage disposal and pre-wash functions				
11.7	Limit garbage disposal use - hand scrape food trays, receptacles and utensils into garbage containers or equip sinks with strainers or mesh screens to divert food waste from the garbage disposal				



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