

**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 our 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 of 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 management water use practices for all campus operations.
3. Identify opportunities to use reclaimed in place of potable water.
4. Implement low cost quick payback projects immediately.
5. Identify, plan, and phase implementation of high cost capital projects.
6. Develop a communication plan to encourage campus wide water conservation.
7. Collaborate with faculty and students on water related courses and projects.
8. Share best practice with campus auxiliaries and provide technical support to help develop water and implement conservation projects.
9. Strengthen partnerships and increase collaboration with local water utility and regional water agencies to support CSULB water initiatives.
10. Plan future campus development for water resiliency.

CONCLUSION

The state of California is facing a major water crisis and will continue to experience water shortages due to drought for many years to come. CSULB is taking action now and will ramp up water conservation and efficiency efforts over the next few years. The majority of these projects require significant financial resources to implement and CSULB will seek all available funding from internal and external sources for phased implementation of future water conservation projects. Additionally, CSULB will continue to work with the Long Beach Water Department and regional water agencies and leverage water conservation incentives and grants to reduce the overall project cost to the campus. Saving water is a simple concept that most people understand, it is the changes we need to make in our physical infrastructure and the changes in ways we use water around campus will be more of a challenge. CSULB is determined to take on these challenges and take the necessary action to reduce campus water consumption.

Campus Water Conservation Action Plan Projects
California State University Long Beach

7/11/14

| Identify as Completed (1), Planned (2), or Requested (3) | Priority | Campus | Main Categories | | | | Sub Categories | | | 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 - campus wide | \$ 151,457 | 7386 | \$ 21,419 |
| 3 | 1 | | | | X | | | | X | Install low flow urinals | Replace standard urinals with 0.25 GPF urinals - campus wide | \$ 75,729 | 3693 | \$ 10,710 |
| 2 | 1 | | | | X | | | | X | Install low flow faucet aerators | Install 0.5 GPM faucet aerators - campus wide | \$ 5,930 | 1139 | \$ 3,303 |
| 2 | 1 | | | | X | | | | X | Install low flow shower heads | Install low flow shower heads - Pyramid | \$ 12,530 | 3425 | \$ 9,933 |
| 3 | 1 | | X | | | | | | X | Comprehensive Water Audit | Perform comprehensive water audit to establish water budgets and to identify water conservation opportunities | \$ 53,000 | TBD | TBD |
| 3 | 2 | | | X | | | | | X | Install low flow toilets | Replace all 3 GPF toilets to 1.28 GPF - campus wide | \$ 600,100 | 980 | \$ 2,842 |
| 2 | 1 | | | | X | | | | X | Replace water filtration system at Japanese Garden | Replace existing sand filters with high efficient bio-mechanical filters to reduce backwash cycles | \$ 75,000 | 2400 | \$ 6,960 |
| 3 | 1 | | | | X | | | | X | Convert central plant cooling tower to reclaimed water service | 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 aging 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 shower heads 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 Xeros polymer bead laundry system for onsite testing | \$ 12,000 | 1843 | \$ 12,185 |
| 3 | 1 | | | | | | | | X | Install Weather Based Irrigation Controller/Stations | Convert standard irrigatin timeclock 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 - 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 - multiple campus location | TBD | 365 | \$ 1,059 |
| 3 | 2 | | | | | | | | X | Conduct Feasibility Study To Convert Lawn to Drought Tolerant Ground Cover - Campus wide (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 |

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

| Best Management Practices - General | | | | |
|--|--|---|---|--|
| 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 Best Management Practice 1 - Water Management Planning | | | | |
|---|---|---|---|--|
| 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 | | |

| 2 Best Management Practice 2 - Information and Education Programs | | | | |
|--|---|--|---|--|
| 2.1 | In a public place in the facility, post informational graphics and other outreach information about facility water consumption and water conservation goals | | X | |

| 3 Best Management Practice 3 - Distribution System Audits, Leak Detection and Repair | | | | |
|---|--|---|---|---|
| 3.1 | Perform a basic visual/audible leak detection survey of the primary water delivery and distribution systems | | X | |
| 3.2 | Identify and repair all leaks | X | | |
| 3.3 | Install water leak detection devices and reporting systems that can be integrated into existing building security or automated control systems | | | X |
| 3.4 | Establish response protocols for water emergencies | X | | |

| 4 Best Management Practice 4 - Water-Efficient Landscaping | | | | |
|---|---|---|--|---|
| 4.1 | Identify, modify or establish procedures to apply mulch regularly around trees and shrubs and in planting areas. Avoid highly flammable mulches. Mulch should be composted wood or other organic products free of toxic or inorganic materials. Mulch should be applied to a depth of at least 2 inches | X | | |
| 4.2 | When mowing turf, avoid scalping and keep grass length long to reduce watering needs. Generally, grass should be left about 3" long | | | X |
| 4.3 | Restrict the use of herbicides and hand-pull weeds regularly to avoid unwanted plants consuming water | X | | |
| 4.4 | Use brooms and rakes to sweep hardscapes near landscaped areas instead of spraying with water | X | | |

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 |
|----------|--|------------------|--------------|----------|----------------|
| 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 | Best Management Practice 5 - Water-Efficient Irrigation | | | | |
|----------|--|---|--|---|--|
| 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 | Identify, modify or establish procedures to avoid watering during heavy winds, or during rain seasons | X | | | |
| 5.9 | Identify, modify or establish procedures to adjust irrigation times and durations seasonally | X | | | |
| 5.10 | Post a copy of the irrigation schedule inside irrigation controller box doors | X | | | |
| 5.11 | Install shut-off nozzles or quick-couplers for all hoses | X | | | |
| 5.12 | Replace leaking shut-off nozzles, quick couplers and hoses | X | | | |
| 5.13 | Install faucet timers for hose or hand irrigation | X | | | |
| 5.14 | Maintain a monthly log of irrigation water use with account and meter numbers | | | X | |

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

| | | | | | |
|------|--|---|--|---|--|
| 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 | | | |
| 5.18 | 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 | |
| 5.19 | Identify and modify manually operated irrigation valves to automated valves | | | X | |
| 5.20 | 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 | | | |
| 5.21 | Turn off water fountains and establish maintenance procedures for existing pumps and equipment | | | X | |
| 5.22 | Inspect and maintain backflow prevention devices | X | | | |

| | | | | | |
|----------|--|---|---|---|---|
| 6 | Best Management Practice 6 - Toilets and Urinals | | | | |
| 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 | | | |
| 6.4 | Toilets that need to be replaced due to normal wear-and-tear should be replaced with low-flow models | X | | | |
| 6.5 | Install toilet tank water displacement devices, such as toilet dams, bags, or weighted bottles | | | | X |
| 6.6 | Retrofit flushometer (tank-less) toilets with water-saving diaphragms | X | | | |
| 6.7 | Replacing toilets with low-volume models. Toilets can use as much as 3.5 gallons per flush, while low-volume toilets can use as low as 1 to 1.28 gallons per flush | | X | | |
| 6.8 | Set urinals with programmable automatic flush valves to a water saving mode that flushes the urinal after more than one use | | | X | |
| 6.9 | Install waterless urinals wherever possible | X | | | |

| | | | | | |
|----------|--|---|--|--|--|
| 7 | Best Management Practice 7 - Faucets and Showerheads | | | | |
| 7.1 | Adjust fixtures to use the minimum amount of water required for proper function | X | | | |
| 7.2 | If replacing broken fixtures, install water conserving devices | X | | | |
| 7.3 | Repair leaking or dripping faucets or showerheads | X | | | |
| 7.4 | Showerheads or faucets in need of replacement due to normal wear-and-tear, should be replaced with low-volume models | X | | | |
| 7.5 | Low-volume showerheads use only 2 gallons of water each minute; older models may use as much as 3 gallons per minute | X | | | |
| 7.6 | Replace 2.5 gallons per minute kitchen faucets with those that use only 1.5 - 1.8 gpm | X | | | |
| 7.7 | Replace restroom faucets that use as much as 1.5 gallons per minute with those which use only 0.5 gpm | X | | | |
| 7.8 | Replace restroom faucets with programmable faucets that use 0.20 gallons per cycle | X | | | |

| | | | | | |
|----------|--|---|--|--|--|
| 8 | Best Management Practice 8 - Boiler/Steam Systems | | | | |
| 8.1 | Perform a basic visual/audible leak detection survey of the primary steam distribution pipes and steam traps. Develop a steam trap inspection plan. Replace faulty steam traps with effective, low-maintenance units | X | | | |
| 8.2 | Identify the location of all leaks and record relative severity (serious or minor) | X | | | |
| 8.3 | Repair all leaks as feasible, otherwise verify that all non-repairable leaks are adequately documented in maintenance management logs and databases | X | | | |
| 8.4 | Inspect piping and main tank insulation, repair or replace as necessary | X | | | |

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 |
|-----------|--|------------------|--------------|----------|----------------|
| 8.5 | Identify, modify or establish procedures to reuse steam condensate and boiler blow-down water for other purposes where feasible; Steam condensate shall be returned to the boiler unless volumes are too low to justify condensate return loops; in the latter case, the condensate shall be reused beneficially wherever possible | X | | | |
| 8.6 | Identify, modify or establish procedures to avoid once-through/single pass operations | X | | | |
| 8.7 | Where water softening is used, regeneration shall be controlled by actual hardness or by a flow volume control that is based on the hardness of the water to be softened. Softeners that use timers for recharging should be eliminated | X | | | |
| 9 | Best Management Practice 9 - Single Pass Cooling Equipment | | | | |
| 9.1 | Perform a basic visual/audible leak detection survey of the primary cooling water distribution pipes; as part of Preventive Maintenance Program | X | | | |
| 9.2 | Identify the location of all leaks and record relative severity (serious or minor) | X | | | |
| 9.3 | Repair all leaks as feasible, otherwise verify that all non-repairable leaks are adequately documented in maintenance management logs and databases | X | | | |
| 9.4 | Inspect piping, chiller and storage tank insulation, repair or replace as necessary | X | | | |
| 9.5 | Condensate from the air conditioner cooling coils should be captured and used for cooling tower makeup or other purposes. Building design should be considered that would help facilitate the easy capture of condensate by location of air handling units | | | X | |
| 9.6 | Find alternative uses for single-pass effluents such as landscaping, boiler or cooling tower make-up water, or toilet flushing | | | X | |
| 9.7 | Future systems should specify multi-pass, closed loop, or air-cooled equipment options | | | X | |
| 10 | Best Management Practice 10 - Cooling Tower Management | | | | |
| 10.1 | Perform a visual/audible leak detection survey of the primary cooling tower water distribution pipes | X | | | |
| 10.2 | Identify the location of all leaks and record relative severity (serious or minor) | X | | | |
| 10.3 | Repair all leaks as feasible, otherwise verify that all non-repairable leaks are adequately documented in maintenance management logs and databases | X | | | |
| 10.4 | Identify, modify or establish procedures to eliminate once-through/single pass cooling, or for reusing water elsewhere in the facility | X | | | |
| 10.5 | Identify, modify or establish procedures to use air cooling where feasible | X | | | |
| 10.6 | Identify, modify or establish procedures for water treatment to maximize cycles of concentration; Cooling tower chemical contracts must specify the cycles of concentration to be achieved. The cycles of concentration should be set to match local water chemistry but shall exceed at least four cycles unless the blowdown is being reused for landscape irrigation or other water conserving uses | X | | | |
| 10.7 | Identify, modify or establish procedures to reuse cooling tower effluent where possible | | | X | |
| 10.8 | Identify, modify or establish procedures to reuse treated waste water or other non-potable water sources for cooling tower make-up | | | X | |
| 10.9 | Cooling tower side stream filtration should be installed when new systems are purchased | | | X | |
| 11 | Best Management Practice 11 - Commercial Kitchen Equipment | | | | |
| 11.1 | Perform a visual/audible leak detection survey of all kitchen devices using water | X | | | |
| 11.2 | Identify the location of all leaks and record relative severity (serious or minor) | X | | | |
| 11.3 | Repair all leaks as feasible, otherwise verify that all non-repairable leaks are adequately documented in maintenance management logs and databases | X | | | |
| 11.4 | Clean or replace high pressure pre-rinse spray valves | | | | |
| 11.5 | Identify, modify or establish procedures to eliminate wasteful water use | | | | |
| | Examples: | | | | |
| | Do not use running water to melt ice | | | | |
| | Operate dishwashing equipment only when needed | | | | |
| | Wash only full loads | | | | |

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

| | | | | | |
|------|--|--|--|--|--|
| 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 | | | | |

| | | | | | |
|-----------|---|---|--|--|--|
| 12 | Best Management Practice 12 - Laboratory/Medical Equipment | | | | |
| 12.1 | Perform visual/audible leak detection surveys of all water use or distribution systems | X | | | |
| 12.2 | Identify the location of all leaks and record relative severity (serious or minor) | X | | | |
| 12.3 | Repair all leaks as feasible, otherwise verify that all non-repairable leaks are adequately documented in maintenance management logs and databases | X | | | |
| 12.4 | Identify, modify or establish procedures to turn off any equipment not in use | X | | | |
| 12.5 | Inspect solenoids and automatic shut-off valves for proper function and repair or replace as feasible | X | | | |
| 12.6 | Verify that all equipment is set to minimum manufacturer pressure and flow rates | X | | | |

| | | | | | |
|-----------|--|--|--|---|--|
| 13 | Best Management Practice 13 - Laundry | | | | |
| 13.1 | Identify, modify or establish procedures to evaluate wash cycles and detergent/chemical formulation for maximum efficiency | | | X | |
| 13.2 | Identify, modify or establish procedures to avoid excess filter and softener back flush | | | X | |
| 13.3 | Identify, modify or establish procedures to restrict use of equipment to only full loads | | | X | |
| 13.4 | Identify, modify or establish procedures to minimize use of stand-alone washing machines | | | X | |

| | | | | | |
|-----------|--|---|--|---|--|
| 14 | Best Management Practice 14 - Vehicle Washing | | | | |
| 14.1 | Identify, modify or establish procedures to keep records of water used per vehicle washed | X | | | |
| 14.2 | Determine the effects of eliminating vehicle washing activities | X | | | |
| 14.3 | Verify all solenoids, valves, nozzles and other equipment are adjusted for minimum manufacturer pressure and flow rates | X | | | |
| 14.4 | Inspect jets and hose parts, replace as necessary | X | | | |
| 14.5 | Identify, modify or establish procedures to reduce foam and the resulting need for rinse water | X | | | |
| 14.6 | Identify, modify or establish procedures to use higher pressure rinses instead of flood arches | X | | | |
| 14.7 | Identify, modify or establish procedures to use environmentally preferable and chemically compatible washing solutions and waxes to enable recycling | | | X | |

Business and Finance
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Sally F. Roush
Interim Vice Chancellor


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sroush@calstate.edu

MEMORANDUM

DATE: February 4, 2014

TO: CSU Presidents

FROM: Sally F. Roush 
Interim Vice Chancellor

SUBJECT: State of California, Drought Emergency

On January 17th 2013, Governor Brown declared a State of Emergency saying "the State of California is experiencing record dry conditions, with 2014 projected to become the driest year on record" and he has asked for "*all Californians to conserve water in every way possible.*" The governor has directed all state agencies to immediately implement water use reduction plans for all state facilities. These plans will include immediate water conservation actions, and a moratorium will be placed on new, non-essential landscaping projects. He has also expanded his water conservation public awareness campaign (www.saveourh2o.org) and calls on all Californians to reduce their water usage by 20 percent.

As one of the state's largest institutions, the CSU is supportive of the governor's efforts to conserve water across the state. The Office of the Chancellor is participating by reducing water usage where possible and reviewing campus water consumption reporting. CSU campuses already actively track, report and implement strategies to conserve our natural resources and have for many years. However, this state of emergency is an opportunity for all CSU campuses to reevaluate water usage and reduce where possible throughout the declared drought. Campus leadership is encouraged to support Governor Brown's public awareness campaign to have a 20 percent reduction in personal consumption.

CSU Campuses
Bakersfield
Channel Islands
Chico
Dominguez Hills
East Bay

Fresno
Fullerton
Humboldt
Long Beach
Los Angeles
Maritime Academy

Monterey Bay
Northridge
Pomona
Sacramento
San Bernardino
San Diego

San Francisco
San José
San Luis Obispo
San Marcos
Sonoma
Stanislaus

CSU Presidents
February 4, 2014
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Under current Executive Order 987, campuses report water consumption monthly. To assist in tracking our water reduction activities campuses should evaluate their current reporting of water to ensure all sources are captured and reported in a timely manner. Data submitted is used to report to the Board of Trustees regarding our progress on utility reduction goals.

Thank you for your diligence and continued efforts to conserve the natural resources of California. Your campus participation will help us all get through this emergency.

SFR: ESJ

MEMORANDUM

To: Vice Presidents, Administration and Finance
Vice Presidents, Student Affairs

From: Elvyra F. San Juan 
Assistant Vice Chancellor
Capital Planning, Design and Construction

c: Executive Facilities Officers
Directors of Facilities Operations
Energy Managers
Public Information Officers
Laurie Weidner, Assistant Vice Chancellor, Public Affairs
Erik Fallis, Senior Manager of Operations, University Relations and Advancement
CPDC Managers

Date: March 13, 2014

Re: State of California Drought Emergency and Water Conservation Action Plans

On February 4, 2013, your campus president received a memorandum from Interim Vice Chancellor Sally F. Roush asking you to reevaluate water usage, implement water reduction strategies and target a 20 percent personal consumption reduction goal. This memo is to follow-up on campus action plans and request campuses: 1) review and confirm baseline water consumption data; 2) provide information on water conservation projects; and 3) actively participate in drought response messaging.

Review of Water Consumption and Cost Data

Based on the data provided by your campus, we have compiled the following historical water consumption and cost information in the enclosed Campus Water Workbook including:

- Campus Total Water Consumption (Consumption Data tab)
- Campus Total Water Cost (Cost Data tab)
- Campus Water Consumption graphs are also included in the workbook

Please review the enclosed Excel workbook data tabs to confirm accuracy of data, or correct data as needed. Where applicable, identify water supply categories such as utility potable water, utility reclaimed water, and/or well water. Also review water usage categories such as domestic water, irrigation water, industrial and fire protection water, etc. The data has been collected from the campus Monthly Energy Reports. Please specifically review the data that corresponds to any abnormally high campus peaks or gaps in the data as one method to check the data.

Water Conservation Action Plans

To assist you in developing or updating your existing water usage plans, a toolkit and checklist can be found under Useful Links at <http://www.calstate.edu/cpdc/sustainability> as a guide for your consideration. Using Campus Projects tab of the workbook, assign each project with a number corresponding to its status:

- 1) *Completed* : Any recently implemented water conservation projects (project title/location, brief description, cost estimate, estimated water and cost savings);
- 2) *Planned*: The list of any planned campus funded conservation measures. The campus is encouraged to promote conservation projects in all academic buildings, and in particular high use areas like student housing and food service. The installation of low flow fixtures has been very successful and the discontinued use of food service trays in the dining commons have resulted in less food waste and reduce water use.
- 3) *Requested*: The list of additional water conservation project(s) that would support the governor's reduction goal that can be used by the Chancellor's Office in soliciting available state funding. Please identify projects in both state and non-state supported buildings that can contribute to the savings goal.

Drought Response Messaging

We would like assistance in CSU drought response messaging and want to support the governor's messaging efforts as well. Therefore, please do the following:

- 1) Provide the Chancellor's Office Public Affairs unit copies of campus articles, awards, and/or best practices that highlight campus conservation efforts for our use in providing to the governor. Send this information to Elizabeth Chapin, Public Affairs Assistant at echapin@calstate.edu.
- 2) Incorporate the state water conservation logos and slogans in messaging to the campus community.
- 3) Regularly publish consumption usage to help the campus community track performance to reduction goals. The CPDC website will be updated to add systemwide performance.
- 4) Identify any adverse economic impacts that the drought is having on the campus and quantify as best possible. Share this information with my office, your campus Public Affairs office and Elizabeth Chapin.

The CSU is committed to helping the state and western region during this emergency. The draft sustainability policy update on conservation and sustainable practices currently includes a 20 percent water reduction goal by 2020. In light of the severe drought, interim goals are proposed in order to achieve this goal sooner. It is recognized that funding for conservation measures will help make a significant reduction in consumption, but we hope increased and improved messaging will also prompt changes in individual behavior.

Thank you in advance for your response and assistance. Should you have any questions regarding the Excel workbook, please call Michael Clemson, Associate Energy Analyst at (562) 951-4291, mclemson@calstate.edu. Len Pettis, Chief of Plant, Energy and Utilities and I can also be reached should you have any other questions or comments.

ESJ:LP:jdes

Attachment: *Campus Water Workbook*