State Agency Facility

Water Use Reduction Guidelines and Criteria

Pursuant to Executive Order B-18-12

Prepared by the California Department of Water Resources

February 28, 2013

A. Authority - Executive Order

In April 2012, Governor Brown signed Executive Order B-18-12 (Appendix A) that requires State agencies to implement green building practices to improve energy, water and materials efficiency, improve air quality and working conditions for State employees, reduce costs to the State and reduce environmental impacts from State operations. Executive Order B-18-12 rescinds Executive Order S-20-04, which focused primarily on electricity use.

Executive Order B-18-12 requires State agencies to reduce agency-wide water use 10% by 2015 and 20% by 2020 as measured against a 2010 baseline. The 2015 and 2020 targets reinforce the SB X7-7 requirement that State agencies reduce water use at facilities they operate to support local water suppliers in meeting their targets. The Green Building Action Plan (GBAP) which accompanies Executive Order B-18-12 directs the Department of Water Resources (DWR) to develop and propose by January 1, 2013 guidelines and criteria for State agencies to improve water use efficiency and to recommend a third party database for reporting and monitoring State facilities water use.

All State agencies, departments and other entities under direct authority of the Governor are subject to the executive order. Entities not under direct authority of the Governor include the University of California, California State University and California Community College systems. These institutions are requested to set similar goals.

Each applicable agency shall take actions to reduce water use in facilities and landscapes that are operated by the state, including facilities owned, funded or leased. State operated facilities are defined as facilities where the agency has direct control of the buildings' function, maintenance and repair. For leased facilities, the Green Building Action Plan (Appendix A) directs that new and renegotiated leases shall include provisions for water conservation, reporting water use and installation of sub-meters to the extent possible and economically feasible. Buildings, facilities and landscapes that are subject to water use reductions include, but are not limited to

- office buildings
- hospitals
- veteran's homes

- visitor centers
- museums
- police and fire stations
- academies
- dormitories
- laboratories
- correctional facilities
- courthouses
- public facilities at State parks

The Executive Order water reduction requirements do not apply to process water, fish hatcheries, wildlife habitat restoration; fire fighting, livestock maintenance or highway landscaping.

B. Water Use Guidelines and Criteria

Baselines and Targets- The Executive Order directed that State agencies shall reduce overall water use at the facilities they operate by 10% by 2015 and 20% by 2020 as measured against a 2010 baseline. To meet these requirement State agencies shall collect 2010 water use data for each facility they operate and enter this data into the Energy Star Portfolio Manager (ESPM) database. Agencies should calculate 2015 and 2020 water use targets based on the 2010 baselines.

DWR has developed this Guidelines and Criteria with four components. State agencies are required to implement the four components. The first component is a quantitative inventory of water using fixtures and appliances in state buildings and a measurement of landscape area and assessment of irrigation equipment. The second component is a set of Best Management Practices for ongoing water use efficiency in buildings and landscapes. The third component is large landscape water use tracking, if agency has landscape greater than 20,000 square feet. The fourth component is monitoring, reporting, oversight and compliance.

1 - Building and Landscape Inventory

State agencies should complete the Building and Landscape Inventory. The quantitative inventory requires a facility walk- through to assess the types, numbers and condition of all water using fixtures, appliances and irrigation equipment. By completing this assessment, building managers can assign priority for repairs and replacement. The walk-through inspection can lead to the identification of unreported safety issues, and discover unanticipated opportunities for further water savings. Simple, inexpensive actions such as installing aerators on faucets, tightening loose connections, and adjusting sprinkler heads during the walk-through inventory will lead to immediate water savings. The inventory (see Appendix B for Building Inventory Walk through Checklist) includes but is not limited to:

- Numbers and flush rates of toilets and urinals
- Numbers, flow rates of faucets and showers
- Numbers of cycles, quantity of make-up water and blow-down water for cooling towers and boilers
- Location of water meters
- Landscape area, metering sizes and locations, irrigation schedule, irrigation system maps
- Clothes washers and water using cleaning equipment
- Water using foodservice equipment, dishwashers and pre-rinse spray valves
- Vehicle wash stations

2 - Best Management Practices

Best Management Practices (BMP) are ongoing actions that establish and maintains water use efficiency. State agencies should implement the BMPs outlined below. One of the critical practices in effective water management is to designate a water management coordinator to conduct the walk-through inventory, implement the BMP's and monitor and report water use.

BMPs can be continuously updated based on need and tailored to fit the facility depending on occupancy and specific operations. The DWR has developed generalized BMP's (Appendix C) for buildings and landscapes, more specific BMPs suitable for specialized operations or equipment can be found in the resources section of this document. Successful water use efficiency programs incorporate a few key activities:

- Designate a water management coordinator
- Schedule regular inspections
- Enlist active participation from facility staff and occupants in reporting leaks and other issues
- Conduct a water use education campaign for staff and building occupants
- Increase the frequency of irrigation system maintenance during the peak irrigation season

3 - Large Landscape Water Use Tracking

As part of the Water Use Guidelines and Criteria, DWR recommends that the water use for landscape areas over 20,000 sq. ft. be tracked through a water budget program. Large landscape water use often represents a significant percentage of a facilities water use and significant water savings can often be achieved through better irrigation scheduling or inexpensive improvements in irrigation hardware.

A landscape water budget is the calculated irrigation requirement of a landscape based on landscape area, local climate factors, specific plant requirements and the irrigation system performance. The water budget establishes an efficient standard for the landscape area. The water budget programs use local weather measurements to adjust the irrigation schedule on a weekly, biweekly or monthly basis. A dedicated landscape meter or an irrigation sub-meter is required to track the actual landscape water

use. The actual water use is entered into the water budget program and the program compares the water use to an efficiency standard. A landscape water use tracking program will help improve irrigation scheduling and will also help detect irrigation system leaks. Landscape water budget management services in California are available by landscape associations and private vendors.

By reading the water meter and entering water use data into the program database, the landscape water manager can monitor water use and make immediate decisions regarding the irrigation schedule to maintain the landscape at or below the water budget. A landscape water audit and needed repairs to the irrigation system are advised at initiation of the Program to obtain optimum results. Costs for the program are the responsibility of the agency.

Water use data from the local water provider or data entered by the landscape manager and landscape water budget calculated specific to each landscape based on local climate and plant water needs is used for landscape water management. Data from dedicated landscape meters or in the case of facilities with mixed use meters, a landscape sub-meter can provide the necessary data. If a dedicated meter or sub-meter is not available a winter / summer water use comparison can be used to estimate the summer irrigation demand and landscape water budget.

Landscape maintenance staff should attend an EPA WaterSense labeled training program. WaterSense labeled irrigation training programs include the Irrigation Association Certified Irrigation Auditor (CLIA), Certified Irrigation Contractor(CIC), Certified Irrigation Designer(CID), Sonoma Marin Water Saving Partnership Qualified Water Efficient Landscaper (QWEL)and the California Landscape Contractor Association‘s Water Management Certification Program (WMCP). All listed EPA WaterSense labeled programs are available throughout California.

Water use baselines and targets do not have to be established separately for large landscapes. The large landscape water use should be included in the facilities baseline and target water use. If the landscape is served by a utility owned dedicated landscape account meter, the volume of water used should be added to the amount recorded by the utility meter serving the building. If the landscape water is sub-metered after it has gone through the mixed use utility owned meter, it has already been accounted for in the total facility water use measurement.

4- Monitoring, Reporting, Oversight and Compliance

Each state agency is responsible for monitoring water use and reporting baseline and annual water use for compliance with the water use reduction targets. Water use should be measured and if a facility does not have water meter water use should be estimated at each facility.

Estimating Water Use at Facilities without Water Meters

Water use must be estimated at state facilities that do not have water meters. If not cost prohibitive, state agencies should prioritize water meter installations to obtain accurate measurement of water use.

Baseline water use can be estimated based on water use ratings of fixtures and appliances at the site, the duration per use, amount of usage, and the number of occupants. The California Green Building Standards Code provides a baseline water use calculation table that will aid state agencies in developing their water use estimates. Water use reductions can be estimated by comparing flow rates of replacement fixtures with old fixtures. For example, there will be a water use reduction of 3.72 gallons per flush (gpf) by replacing a 5-gpf toilet with a 1.28-gpf toilet. All estimates and assumptions of water use should be well documented.

Water Use Reporting

Beginning January 2013, agencies shall regularly report current water use into the water tracking database. Commencing January 2014, annual water use reports will document progress towards the 2015 and 2020 targets. Estimating water use baselines and ongoing water use at sites without meters will be discussed later in this document. The Green Building Action Plan directed DWR to recommend a 3rd party database for reporting and monitoring state facilities water use. The Green Building Action Plan requires State agencies to use the ESPM http://www.energystar.gov/index.cfm?c=evaluate_performance.bus_portfoliomanager_benchmarking to track energy use and submit annual reports to DGS. DWR recommends that State agencies use the ESPM for tracking facility water use and report to DGS annually (Sustainability Manager, Department of General Services, 707 Third Street, 8th Floor, West Sacramento, CA 95798-9052). Additionally, for facilities with landscape areas over 20,000 sq. ft. the department recommends that the facilities landscape water use be tracked with a water budget program.

DWR recommends that State agencies use the Energy Star Portfolio Manager (ESPM) developed by the United States Environmental Protection Agency (USEPA) for the following reasons:

- The USEPA provides Energy Star Portfolio Manager at no cost to users
- ESPM allows agencies to track and assess energy and water consumption across their entire portfolio of facilities
- Data is entered online through a secure website
- ESPM is currently being used by numerous agencies to document their facility energy usage
- ESPM can be used to calculate an agencies' total facility carbon footprint

USEPA offers recognition in the form of labeling and rewards for excellent building performance. State Agency Compliance with the Executive Order's water use reduction goals is based on the water use of all the agencies' facilities.

C. Technical Assistance

Most local water providers offer technical assistance to their customers by performing water audits, offering rebate and other incentive programs and providing educational materials and training courses. The California Urban Water Conservation Council offers a variety of workshops and webinars on topics ranging from water loss management to commercial, industrial and institutional (CII) best management practices. The CUWCC and East Bay Municipal Utilities District has a comprehensive list of BMPs that State agencies can reference. Agencies are encouraged to seek out available resources provided by other agencies, and to contact their local water providers to determine the most efficient and effective water reduction methods.

D. References

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APPENDIX A

EXECUTIVE ORDER B-18-12

4-25-2012

WHEREAS green building practices use energy, water, and materials efficiently throughout the building life cycle, enhance indoor and outdoor air quality, improve the health, productivity, and working lives of state employees, incorporate environmentally preferable products, and substantially reduce the costs and environmental impacts associated with operating State buildings; and

WHEREAS energy and water efficiency improvements in State buildings and operations save the State money and boost California's economy by investing in green technology companies and green jobs; and

WHEREAS the California Global Warming Solutions Act of 2006 requires the State to reduce greenhouse gas emissions to 1990 levels by 2020 and beyond, and the energy used in buildings accounts for the second largest contribution to California's greenhouse gas emissions.

NOW, THEREFORE, I, Edmund G. Brown Jr., Governor of the State of California, do hereby issue the following orders to become effective immediately:

IT IS HEREBY ORDERED that State agencies, departments, and other entities under my direct executive authority (State agencies) take actions to reduce entity-wide greenhouse gas emissions by at least 10% by 2015 and 20% by 2020, as measured against a 2010 baseline.

IT IS FURTHER ORDERED that all new State buildings and major renovations beginning design after 2025 be constructed as Zero Net Energy facilities with an interim target for 50% of new facilities beginning design after 2020 to be Zero Net Energy. State agencies shall also take measures toward achieving Zero Net Energy for 50% of the square footage of existing state-owned building area by 2025.

IT IS FURTHER ORDERED that State agencies continue taking measures to reduce grid-based energy purchases for State-owned buildings by at least 20% by 2018, as compared to a 2003 baseline, and reduce other non-building, grid-based retail energy purchases by 20% by 2018, as compared to a 2003 baseline.

IT IS FURTHER ORDERED that State agencies participate in "demand response" programs to obtain financial benefits for reducing peak electrical loads when called upon, to the maximum extent that is cost-effective for each State-owned or leased facility, and does not materially adversely affect agency operations.

IT IS FURTHER ORDERED that any proposed new or major renovation of State buildings larger than 10,000 square feet use clean, on-site power generation, such as solar photovoltaic, solar thermal and wind power generation, and clean back-up power supplies, if economically feasible.

IT IS FURTHER ORDERED that new or major renovated State buildings and build-to-suit leases larger than 10,000 square feet obtain LEED "Silver" certification or higher, using the applicable version of LEED.

IT IS FURTHER ORDERED that new and existing buildings incorporate building commissioning to facilitate improved and efficient building operation.

IT IS FURTHER ORDERED that State agencies identify and pursue opportunities to provide electric vehicle charging stations, and accommodate future charging infrastructure demand, at employee parking facilities in new and existing buildings.

IT IS FURTHER ORDERED that the Department of General Services work with other State agencies to develop by July 1, 2013, policies and guidelines for the operation and maintenance of State buildings to achieve operating efficiency improvements and water and resource conservation, and to continually update and incorporate these into the State Administrative Manual.

IT IS FURTHER ORDERED that State agencies implement relevant and feasible voluntary measures from Divisions A4.5 and A5.5 of the California Green Building Standards Code, to ensure healthy indoor environments for occupants.

IT IS FURTHER ORDERED that State agencies reduce overall water use at the facilities they operate by 10% by 2015 and by 20% by 2020, as measured against a 2010 baseline.

IT IS FURTHER ORDERED that State agencies purchase and use environmentally preferable products that have a lesser or reduced effect on human health and the environment when compared with competing goods that serve the same purpose whenever they are applicable, perform well, and are cost-effective per Public Contract Code section 12400.

IT IS FURTHER ORDERED that State agencies identify and pursue available financing and project-delivery mechanisms to achieve these goals.

IT IS FURTHER ORDERED that State agencies measure, monitor, report, and oversee progress on measures in this Order.

IT IS FURTHER ORDERED that State agencies implement the measures described in the accompanying Green Building Action Plan for facilities owned, funded, or leased by the state.

IT IS FURTHER ORDERED that Executive Order S-20-04 is rescinded immediately.

IT IS REQUESTED that entities of State government not under my direct executive authority also implement similar measures.

This Executive Order is not intended to create, and does not create, any rights or benefits, whether substantive or procedural, or enforceable at law or in equity, against the State of California or its agencies, departments, entities, officers, employees, or any other person.

I FURTHER DIRECT that as soon as hereafter possible, this Order shall be filed with the Office of the Secretary of State and that it be given widespread publicity and notice.

IN WITNESS WHEREOF I have hereunto set my hand and caused the Great Seal of the State of California to be affixed this 25th day of April 2012.

_____
EDMUND G. BROWN JR.
Governor of California

ATTEST:

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DEBRA BOWEN
Secretary of State

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Green Building Action Plan – For Implementation of Executive Order B-18-12

(Detailed implementation direction and actions that accompany Executive Order B-18-12)

Greenhouse Gas Emissions

1. State agencies, departments, and other entities under the governor's direct executive authority (State agencies) shall take actions to reduce entity-wide greenhouse gas emissions by at least 10% by 2015 and 20% by 2020, as measured against a 2010 baseline.

Energy

2. All new State buildings and major renovations beginning design after 2025 shall be constructed as Zero Net Energy facilities with an interim target for 50% of new facilities beginning design after 2020 to be Zero Net Energy. State agencies shall also take measures toward achieving Zero Net Energy for 50% of the square footage of existing State-owned building area by 2025.
    2.1. The State shall identify at least three buildings by January 1, 2013, to pursue Zero Net Energy as pilot projects. These shall include at least one new building to be designed and constructed, one major renovation, and one existing building.
    2.2. New and major renovated State buildings and build-to-suit leases shall be designed and constructed to exceed applicable version of CCR Title 24, Part 6, by 15% or more, and include building commissioning, for buildings authorized to begin design after July 1, 2012.
3. New and renegotiated state building leases shall reduce energy and resource use to the extent possible and economically feasible.
    3.1. New building leases shall, where economically feasible, include sub-meters and provide energy use data into Energy Star's Portfolio Manager.
    3.2. Renegotiated State leases for buildings where the State is a sole tenant shall provide energy use data into Energy Star's Portfolio Manager.
    3.3. New and renegotiated State building leases shall encourage landlords to participate in utility sponsored energy conservation measures, using alternative financing.
4. State agencies shall continue taking measures to reduce grid-based energy purchases for State-owned buildings by at least 20% by 2018, as compared to a 2003 baseline, and reduce other non-building, grid-based retail energy purchases by 20% by 2018, as compared to a 2003 baseline.
    4.1. Energy purchase reductions shall include and combine all forms of energy, including electricity, natural gas, propane, etc., and convert energy purchased into common units of energy (kBtu). Onsite renewable energy generated is not included in total energy purchases, and counts toward reductions.
    4.2. The Department of General Services shall establish an interim benchmark target for December, 2014, for the achievement of these reductions by State agencies.
    4.3. The provision shall not apply to retail electricity purchases for water management activities directly associated with water conveyance and flood control that are highly variable depending on weather conditions.
5. State agencies shall participate in "demand response" programs to obtain financial benefits for reducing peak electrical loads when called upon, to the maximum extent that is cost-effective for each State-owned or leased facility, and does not materially adversely affect agency operations.

On-Site Renewable Energy Goals

6. Any proposed new or major renovation of State buildings larger than 10,000 square feet shall use clean, on- site power generation such as solar photo-voltaic, solar thermal and wind power generation, and clean back- up power supplies, if economically feasible.

6.1. Facilities with available open land shall consider large scale distributed generation through various financing methods, including third party power purchase agreements.

Building Design & Construction

7. New and major renovated State buildings and build-to-suit leases larger than 10,000 square feet shall obtain LEED "Silver" certification or higher, using the applicable version of LEED.

   7.1. Certification to an equivalent or higher standard is acceptable when approved by the Sustainable Building Task Force.

   7.2. Buildings smaller than 10,000 square feet authorized to begin design after January 1, 2013, shall meet applicable California Green Building Standard's Tier 1 measures.

Building Commissioning

8. New and existing buildings shall incorporate building commissioning to facilitate improved and efficient building operation. Actions shall include:

   8.1. The Department of General Services with the concurrence of the California Energy Commission and other State agencies shall establish energy use intensity (EUI) threshold targets to trigger a requirement for commissioning of existing buildings, based on building type and use, and submit these target EUI thresholds to the Governor's office by January 1, 2013.

   8.2. State agencies with jurisdiction over state-owned buildings shall pursue monitoring-based commissioning for facilities over 5,000 square feet with energy use intensities exceeding thresholds determined by the Department of General Services, to the extent possible.

   8.3. New construction or major renovations greater than 5,000 square feet for offices or other energy intensive spaces shall be commissioned.

Existing Buildings

9. All existing State buildings over 50,000 square feet shall complete LEED-EB certification by December 31, 2015 (including meeting an Energy Star rating of 75, or alternate energy standard established by the California Energy Commission), to the maximum extent cost-effective.

10. The Department of General Services shall work with other State agencies to develop by no later than July 1, 2013, policies and guidelines for the operation and maintenance of State buildings to achieve operating efficiency improvements and water and resource conservation, and to continually update and incorporate these into the State Administrative Manual (SAM). These will include, but are not limited to the following areas:

    10.1. Reducing plug loads;

    10.2. Building and grounds maintenance;

    10.3. Commissioning, retro-commissioning, monitoring-based commissioning;

    10.4. Water efficiency;

    10.5. Recycling and waste diversion practices;

    10.6. Environmentally Preferable Purchasing (EPP);

    10.7. Information technology management;

    10.8. Energy use;

    10.9. Monitoring;

    10.10. Indoor environmental quality

Indoor Environmental Quality

11. State agencies shall implement relevant and feasible voluntary measures from Divisions A4.5 and A5.5 of the California Green Building Standards Code, to ensure healthy indoor environments for occupants.

Water Efficiency and Conservation

12. State agencies shall reduce water use at the facilities they operate by 10% by 2015 and by 20% by 2020, as measured against a 2010.

    12.1. The Department of Water Resources shall develop and propose no later than January 1, 2013, water use guidelines and criteria, as well as recommend the use of an appropriate 3rd party database for reporting and monitoring state facilities' water use to improve water use efficiency in state-operated buildings and landscapes.

        12.1.1. State agencies shall begin using the water use reporting database no later than January 1, 2013 to monitor annual water use and submit annual water use reports into water use database beginning January 1, 2014.

        12.1.2. State agencies shall benchmark and collect 2010 water use data or earlier, if available, for each facility they operate to develop baseline water use from which to calculate the agencies 2015 and 2020 water use targets, and measure progress.

        12.1.3. New and renegotiated state leases shall encourage including provisions for reporting water use and installation of sub-meters where appropriate.

    12.2. All new and renovated State buildings and landscapes shall utilize alternative sources of water wherever cost-effective. Sources may include, but are not limited to: recycled water, graywater, rainwater capture, stormwater retention, and other water conservation measures.

    12.3. Landscape plants shall be selected based on their suitability to local climate and site conditions, and reduced water needs and maintenance requirements.

Electric Vehicle Charging Stations

13. State agencies shall identify and pursue opportunities to provide electric vehicle charging stations, and accommodate future charging infrastructure demand, at employee parking facilities in new and existing buildings.

14. The Department of General Services, in conjunction with other appropriate State agencies and outside entities, shall develop an electric vehicle charging station infrastructure plan including the following:

    14.1. Evaluate existing state-owned parking structures and parking lots and install plug-in electric vehicle charging infrastructure where most cost-effective and appropriate.

    14.2. Plan for and install appropriate cost-effective levels of plug-in electric vehicle charging infrastructure in the new construction of state-owned parking structures and parking lots.

Environmentally Preferable Purchasing (EPP)

15. State agencies shall purchase and use environmentally preferable products that have a lesser or reduced effect on human health and the environment when compared with competing goods that serve the same purpose whenever they are applicable, perform well and are cost-effective per Public Contract Code 12400 including, but not limited to:

    15.1. Purchase, install and operate EPA Energy Star rated equipment or appliances when cost-effective, meeting purchasing specification requirements, and available for the type of use. In addition, for statewide contracts, where multiple products are available for purchase, the Department of General Services shall set specifications for purchasing equipment or appliances that are the most cost-effective over their life.

    15.2. Consider purchase and use of recycled paint from State Contracts for appropriate exterior applications, providing users with a quality product comparable to virgin paint while offering significant cost savings.

    15.3. Consider use of low or zero VOC paint in building interiors, improving indoor air quality.

15.4. State office printers, copiers or related equipment shall use quality remanufactured ink and toner cartridges to the extent possible and to the extent that the Department of General Services determines that such equipment reduces costs and waste. ,

15.5. State agencies shall purchase, install and operate WaterSense or equivalent industry standard labeled fixtures and equipment (including irrigation equipment) whenever cost-effective, meeting quality requirements, and when available for type of use.

Financing

16. State agencies shall identify and pursue available financing and project delivery mechanisms to achieve these goals including, but not limited to:

    16.1. State revolving loan funds, utility on-bill financing, power purchase agreements, GS $Mart, energy service contractors (ESCO's), or other available programs.

Monitoring and Executive Order Oversight

17. State agencies shall measure, monitor, report and oversee progress on measures in this Order as follows:

    17.1. State agencies shall verify data entries into Energy Star Portfolio Manager including energy use by facilities and individual buildings (if metered separately) that they own, or leased space where the State pays utilities.

    17.2. State agencies shall submit an annual report of this energy use to the Department of General Services by March 1st each year, including energy use, individual building square footages (if metered separately), and building types.

        17.2.1. State agencies shall include separately in the report annual on-site renewable energy generated and used at State-owned facilities.

    17.3. State agencies shall prepare annual inventories of greenhouse gas emissions generated in their course of business and enter these inventories into The Climate Registry's CRIS database.

    17.4. The Department of General Services shall provide this energy use information to the general public on an easily accessible website and submit an annual report commencing July 2012, on the energy use by State-owned facilities, GHG reductions as well as LEED registered and certified projects.

    17.5. A Sustainable Building Task Force shall be formed to provide executive level oversight to meet quarterly and oversee progress on this order.

    17.6. A Sustainable Building Working Group shall be formed of technical representatives of State agencies to oversee implementation of measures in this order, meet monthly, measure results, and report findings to the Sustainable Building Task Force.

APPENDIX B

Building Inventory Walk through checklist
Executive Order B-18-12

Department:	
Facility Name:	
Facility Location:	
Date:	
Completed By:	

	Building A	Building B	Building C	Building D	Total Count
Toilets					
Number of toilets using greater than 1.6 gallons per flush (gpf)					0
Number of toilets using 1.6 gpf					0
Number of toilets using 1.28 gpf					0
Note any conditions that need to be addressed:					
Urinals					
Identify number of urinals using greater 1.0 gpf					0
Identify number of urinals using 1.0 gpf					0
Identify number of urinals using 0.5 gpf or less					0
Note any conditions that need to be addressed:					
Faucets					
Number of faucets using greater than 2.2 gallons per minute (gpm)					0
Number of faucets using 2.2 gpm					0
Number of faucets using 0.5 gpm					0
Number of faucet aerators using greater than 2.2 gpm					0
Note any conditions that need to be addressed:					
Showers					
Number of showerheads using greater than 2.5 gpm					0
Number of showerheads using 2.5 gpm					0
Number of showerheads using 2.0 gpm					0
Note any conditions that need to be addressed:					
Washers					
Number of clothes washers					0
Amount of water used per load (gallons)					0
Dishwasher					
Number of dishwashers					0
How many dishwashers are Energy Star Efficient?					0
Boiler/Steam and Cooling Systems					
Amount of water used for make-up (gallons)					0
Amount of water used for blow-down (gallons)					0
How many cycles of concentration					
Does the system reuse steam condensates or boiler blow-down water for other purposes?					
If yes, how is it reused?					
Are there meters installed on the system make up lines?					
Note any conditions that need to be addressed:					
Cooling Towers					
Amount of water used for make up (gallons)					0
Amount water is released as blowdown (gallons)					0
How many cycles of concentration					
Are meters installed on the system make up lines?					
Is the system using any treated waste water or non-potable water for cooling?					
Note any conditions that need to be addressed:					
Water Source					
What is the source of water supplying the building? (ex. Municipal, groundwater)					
Is there recycled water onsite?					
Landscape					
Landscape area (AF)					0
Is there a separate meter to measure landscape water use?					
Identify locations and note on system map of all irrigation controllers, irrigation meters, and points of connection.					
Identify locations and note on system map of all valves and associated irrigation system hydrozones					

Version 1/29/13

APPENDIX C

Best Management Practices for Water Use in CA State Government Facilities
Executive Order B-18-12

Department:	
Facility Name:	
Facility Location:	
Date:	
Completed By:	
Water Management and Conservation Best Practice	**Check**
Water Management	
Designate a water management coordinator for the facility to track monthly water use, to implement best management practices, and to conduct building walk-through inventory	
In 2013, conduct a building walk-through inventory of all water use fixtures and appliances	
For facilities with landscapes larger than 20,000 sq.ft., attend a landscape water budget tracking program	
Establish a system for facility occupants to report water leaks and water waste	
Educate the staff and facility occupants of water conservation methods and practices	
Leak Detection and Repair	
Perform monthly visual leak detection survey on all water use fixtures:	
A) Toilets	
B) Urinals	
C) Faucets	
D) Showers	
E) Boiler/Steam systems: steam traps, steam lines	
G) Cooling tower	
Check faucets for proper aerators (kitchen faucets 2.2 gpm and lavatory faucets 0.5 gpm), and install aerators or laminar flow devices if necessary	
Check showerhead flow rates and install showerheads using no more than 2.0 gpm if necessary	
Check leak indicator on water meter when water is not in use	
Kitchens	
Replace any broken or damaged dishwasher racks, and run dishwasher only when full to maximize capacity	
Check all equipment water temperatures and flow rates against the manufacturer recommendations. Use the recommended minimum to maximize savings	
Use pre-rinse spray valves with a flow rate of 1.25 gpm or less	
Use strainers or mesh traps in place of garbage disposals	
Laundry Facilities	
Run washer only when full to maximize capacity	
Set water level and water temperature appropriate according to the load	
Sustainable Landscape Practices (all landscapes)	
Check Irrigation schedule, adjust schedule at least monthly, post schedule in controller cabinet	
Maintain irrigations system:	
A) Adjust heads for level, adjust direction of spray and distance of throw, clean filters	
B) Install check valves, swing joints and replace nozzles as needed	
Install and maintain pressure regulators to operate irrigation system according to manufacturers' specifications	
Inspect and maintain backflow prevention devices	
Maintain record drawings of landscapes with identification of hydrozones and corresponding valves and submit a copy to Agency/Department and landscape architect.	
Install shut-off nozzles or quick-couplers for all hoses. Install faucet timers for hose or hand irrigation	
Upgrade irrigation system components such as controllers, nozzles and sensors	
Install submeters or dedicated meters where appropriate	
Special Buildings (i.e.. Hospitals, laboratories)	
Apply water use efficiency methods to all water intensive processes where appropriate	

Version 1/19/13