UC Sustainable Water Systems Policy

Accepted by the
Systemwide Sustainability
Committee 9/24/12

Sustainable Practices Policy Section
Section I – Sustainable Water Systems

II. Definitions

Adjusted Patient Day: Inpatient Days x (Gross Patient Revenue/Inpatient Revenue) where Gross Patient Revenue is Outpatient Revenue + Newborn Revenue + Inpatient Revenue.

Domestic Water: Potable and non-potable water provided for domestic indoor (e.g., toilets, urinals, showers, and faucets) and outdoor (e.g., landscape irrigation) use.

Gross Square Foot: Pursuant to the definition in the Facilities Inventory Guide[1], gross square footage is the Outside Gross Area, or OGSF50, and equals the sum of Basic Gross Area (the sum of all areas, finished and unfinished, on all floors of an enclosed structure, for all stories or areas which have floor surfaces) + 50% Covered Unenclosed Gross Area (the sum of all covered or roofed areas of a building located outside of the enclosed structure). OGSF50 is also known as "California Gross."

Industrial Water: Water provided for specific industrial applications such as heating, cooling, or lubricating equipment.

Purified Water: Water that is free of impurities such as microorganisms, particulate matter, and trace elements and chemical compounds responsible for electrical conductivity; primarily used in biological and engineering labs for research purposes.

Non-Potable Water: Water not suitable for human consumption because it contains objectionable pollution, contamination minerals or infective agents, including:

- Wastewater: A blend of graywater and blackwater.
    - Graywater – Wastewater originating from clothes washers, bathtubs, showers, bathroom sinks, or any other source that has a low likelihood of fecal contamination. Graywater may be treated or untreated prior to reuse.
    - Blackwater – Wastewater originating from sources that have a high likelihood of fecal contamination (e.g., toilets).

Potable Water: Water that meets state water quality standards for human consumption.

Reclaimed or Recycled Water: Wastewater treated with the intention of reuse, including:

- Direct Potable Reuse: Treated wastewater reused for human consumption
- Indirect Potable Reuse: Treated wastewater blended with natural water sources reused as potable or non-potable water.
- Non-Potable Reuse: Treated wastewater reused for purposes other than human consumption, such as irrigation, fire suppression, and industrial processes.

[1] Facilities Inventory Guide, Attachment 8, Appendix C, pages 13-15.

Stormwater: Water that originates during precipitation events.

Sterilized Water: Water that has been cleaned to remove, deactivate, or kill microorganisms present that may be harmful to humans; primarily used in medical facilities.

Sustainable Water Systems: Water systems or processes that maximize water use conservation or efficiency, optimize water resource management, protect resources in the context of the local watershed, and enhance economic, social and environmental sustainability while meeting operational objectives.

Weighted Campus User: (1 × number of on-campus residents) + (0.75 × number of non-residential or commuter full-time students, faculty, and staff members) + (0.5 × number of non-residential or commuter part-time students, faculty, and staff members) as defined by Association for the Advancement of Sustainability in Higher Education (AASHE). When using Weighted Campus User, state whether fall-quarter/semester headcount, three quarter/two semester average headcount, or another measure was used in the Weighted Campus User calculation.

Watershed: In the context of this policy, a watershed is the area of land that drains to a common waterway, such as a stream, lake, estuary, wetland, aquifer, bay, or ocean.

III. Policy Text

I. Sustainable Water Systems[2]

With the overall intent of achieving sustainable water systems and demonstrating leadership in the area of sustainable water systems, the University has set the following goals applicable to all campuses including medical centers:

1. In line with the State of California's law establishing a goal to reduce per capita potable water consumption by 20%[3], each campus will strive to reduce potable water consumption adjusted for population growth by 20% by the year 2020. This target will be re-evaluated and recommendations for adjustments will be made as necessary by the Sustainable Water Systems Working Group. Campuses that have already achieved this target are encouraged to set more stringent goals to further reduce campus potable water consumption.

2. Each campus will develop and maintain a Water Action Plan that identifies the campus' long term strategies for achieving sustainable water systems.

[2] Related sections: Green Building Design policy III.A. 5, Green Building Design procedure V.A.4, and Sustainable Purchasing procedures V.G.10.e, V.G.15, V.G.16, and V.G.17.

[3] For more information on this goal, see http://www.swrcb.ca.gov/water_issues/hot_topics/20x2020/

V. Procedures

I. Sustainable Water Systems

1. Reporting Methods

a. Explicitly identify the geographic and operational areas comprising the scope of campus water usage (e.g., the campus as defined by its Long Range Development Plan boundary, excluding third-party operated facilities).

b. Campuses with medical centers may choose to report medical center data and progress toward the target separately from the main campus and may select a different baseline than the main campus.

c. All campuses shall report water usage in a tabular format using the following methods:

i. Measure per capita water consumption by Weighted Campus User (WCU) for main campuses and Adjusted Patient Day (APD) for medical centers. If necessary, WCU and APD may be combined using the following calculation: [(APD/360)* 1.5] + WCU;

ii. Potable water usage for a baseline period selected by the campus that is three consecutive fiscal years between FY 1995/96 and FY 2010/11:

a) Total campus potable water usage, in gallons, for each of the three years comprising the baseline period,
b) WCU, or APD, for each of the three years comprising the baseline period
c) Baseline Potable Water Usage: calculate the baseline metric as follows: Step 1: Divide each years' total water use in gallons by that years' WCU or APD population. Step 2: Average the three gallons/population calculations to derive the Baseline Potable Water Usage for the campus,
d) Multiply the Baseline Potable Water Usage figure by 0.80 to derive the campus 2020 Potable Water Usage Target, and
e) Unless impracticable, provide average gallons of potable water usage per baseline year per gross square foot of campus built space for which potable water consumption is being reported, mirroring (c)above;

iii. Potable water usage for the most recent fiscal year[4]:

a) If using an average of the three most current fiscal years, which is allowed but not required, follow the method described above for deriving the baseline, but substitute the three most current fiscal years for the three baseline years,
b) If using only the most recent fiscal year, and not an average, list in the table the following:
1. Total campus potable water usage, in gallons, for the most recent fiscal year,
2. WCU or APD for the most recent fiscal year,
3. Divide the gallons by the WCU or APD to derive the Current Potable Water Usage; and

[4] An average of the three most current fiscal years is allowed but not required.

c) If feasible, provide average gallons of potable water usage per gross square feet for either the three most current fiscal years, if that is the method adopted, or for the single most current fiscal year, again using the methodology described above;

iv. Total campus non-potable water usage, in gallons, for the most recent fiscal year[4].

v. Report, or estimate if metered data is not available, water usage in the following use categories at a minimum: campus buildings, landscape, and central plant including cooling towers, identifying the quantities of potable and non-potable used for these purposes;

2. Reporting Schedule

a. Each campus will prepare a campus Water Action Plan as specified below and submit it to the Office of the President by December 2013. Each campus will share its draft plan with the Working Group by July 2013 in order to ensure collaboration on development of final plans.

b. Beginning the following year, each campus will provide an annual progress report on implementing its Water Action Plan to include progress on its water usage reduction.

3. Water Action Plans

a. Each campus' Water Action Plan and the water conservation and water efficiency strategies it contains will take into account relevant regional conditions and regulatory requirements, will recognize historical progress, and will acknowledge current campus best practices being implemented.

b. Each campus Water Action Plan will include a section on Water Usage and Reduction Strategies that:

i. Describes the applicable types of water comprising campus water systems, including but not limited to potable water, non-potable water, industrial water, sterilized water, reclaimed water, stormwater, and wastewater;

ii. Reports water usage in accordance with the methods set forth in these procedures;

iii. Considers setting more stringent potable water reduction goals if the campus has already achieved a 20% below baseline reduction in per capital potable water consumption;

iv. Outlines campus-specific strategies for achieving the target for reduced potable water consumption;

v. Encourages implementation of innovative water-efficient technologies as part of campus capital projects and renovations (e.g., installation of WaterSense certified fixtures and appliances, graywater reuse, rainwater harvesting, and watershed restoration);

vi. Addresses campus use of non-potable water sources, and how those sources factor into the campus' overall sustainable water systems strategy;

vii. Analyzes the identified water use reduction strategies using a full cost approach by considering:

a) Projected costs and savings of the identified water use strategies,

b) Indirect costs and savings associated with reduced energy consumption due to the energy use embodied in water use,

c) Savings associated with reduced or avoided infrastructure costs, and

d) Other avoided costs; and

viii. Sets a timeline for the strategies being implemented to reach the water usage reduction target.

c. Each campus Water Action Plan will include a section on Stormwater Management developed in conjunction with the campus stormwater regulatory specialist that:

i. Addresses campus stormwater management from a watershed perspective in a campus-wide, comprehensive way that recognizes stormwater as a resource and aims to protect and restore the integrity of the local watershed(s);
ii. References the campus' best management practices for preventing stormwater pollution from activities on campus that have the potential to pollute the watershed (e.g., construction; trenching; storage of outdoor equipment, materials, and waste; landscaping maintenance; outdoor cleaning practices; vehicle parking);
iii. Encourages stormwater quality elements such as appropriate source control, site design (low impact development), and stormwater treatment measures to be considered during the planning stages of campus projects in order to most efficiently incorporate measures to protect stormwater quality;
iv. If feasible, cites relevant and current campus stormwater-related plans and permits in an appendix or reference list accompanying the Water Action Plan; and
v. Includes, to the extent feasible, full cost evaluation of stormwater management initiatives similar to the approach in the Water Usage and Reduction Strategies section above.

d. Each campus Water Action Plan will include a section on Education and Outreach that:

i. Presents potential opportunities for the campus to serve as a living laboratory for sustainable water projects;
ii. Supports the campus community (students, faculty, and staff) in efforts to implement sustainable water systems on campus;
iii. Identifies opportunities for pilot projects that illustrate the University's commitment to sustainable water practices through teaching, research, and service; and
iv. Identifies opportunities for new campus practices that could create behavior change across the campus population with regard to water use and watershed management.