County of San Luis Obispo
GENERAL SERVICES AGENCY
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County Facilities and Grounds Water Usage And 20% Reduction Plan

February 2014

Background

Peak water consumption (May through August 2013) equals 207,178 gallons per day. Off-peak water consumption (March, April, September, October, November, and December) equals 130,140 gallons per day. The data includes County owned facilities only, does not include water usage managed through the Public Works Department and does not include leased facilities where the water is paid through rent. This data is historical usage, not a baseline.

A water audit (as recommended below) will survey County water usage and calculate the baseline (example: # gallons per square foot or gallons per person or gallons per acre). The audit will also benchmark with other similar facilities for comparison of water usage.

General Services

Energy Manager

GSA is in the process of conducting an RFP to contract for services for tasks intended to be performed by the Energy Manager. Tasks include:

1. Perform a water audit to identify above-normal and high water usage facilities and functions. This will create a baseline.
2. Conduct an analysis to find potential water conservation measures. The water audit may find water losses attributable to leaks and reveal excessive water usage in facilities.
3. Assess the feasibility of implementing recycled water for irrigation and for car washing.

Architectural Services

1. The County standards for construction include a requirement for low-flow toilets in all County facilities.
2. Reduce irrigation requirements in new construction by incorporating drought tolerant vegetation in landscaping design, installation of drip line irrigation systems, and incorporating moisture sensing devices.

3. Include a requirement for water metering to individual buildings to measure consumption.

Real Property Services

1. Implement a new standard on leases to require low flow fixtures wherever the devices can be used, including in landscaping. New leases will also incorporate the requirement into the Capital Improvements clause.

Facility Services

1. Toilets
    a. Past Actions: Many of the toilets in the County have been replaced with low-flow toilets. Others have been converted from 3.5 gallons per flush (gpf) to 1.6 gpf.
    b. Future Actions: Inventory all County toilets and verify the gpf of each toilet.
    Convert toilets that are not low-flow to low-flow toilets if they can still function properly by doing so. Decide on a case by case basis if toilets that cannot be converted to low-flow toilets should be replaced with low-flow toilets that use 1.28 gpf.
2. Urinals
    a. Past Actions: Some of the urinals in the County have been replaced with low-flow urinals at 1.0 gpf or less. Most of the existing urinals are 1.5 gallons per flush.
    b. Future Actions: Inventory all County urinals and verify the gpf of each urinal. Convert urinals that are not low-flow to low-flow urinals if they can still function properly by doing so. Decide on a case by case basis if urinals that cannot be converted to low-flow urinals should be replaced with low-flow urinals with 0.5 gpf.
3. Faucets
    a. Past Actions: Many of the faucets in the County have had low-flow aerators installed on them.
    b. Future Actions: Inventory all County faucets and verify that they have low-flow aerators installed on them. Install low-flow aerators on all faucets that do not have them.
4. Shower heads
    a. Past Actions: Many of the shower heads in the County have had reduced-flow shower heads installed on them.
    b. Future Actions: Inventory all County shower heads and verify that they have reduced-flow shower heads installed on them. Install reduced-flow shower heads on all showers that do not have them.
5. Reporting water leaks
    a. Past Actions: Facility Services Maintenance and Custodial staff reported all leaking toilets, urinals, faucets, showers, and water

pipes to the ONE-STOP-SHOP immediately so that the necessary repairs could be made as soon as possible.

b. Future Actions: Facility Services Maintenance and Custodial staff will continue to report all leaking toilets, urinals, faucets, showers, and water pipes to the ONE-STOP-SHOP immediately so that the necessary repairs can be made as soon as possible.

6. Cooling tower recovery water
    a. Past Actions: The cooling towers located at the SLO Downtown Central Plant and the SLO Health Campus Central Plant continually lose water through evaporation, drift, and blowdown. The condenser water is treated by chemical means to reduce blowdown. The cooling towers located at the SLO Downtown Central Plant have current estimated water consumption of 1.081,080 gallons per year. The cooling tower located at the SLO Health Campus Central Plant has current estimated water consumption of 600,600 gallons per year.
    b. Future Actions: Research additional methods that can be implemented to further reduce blowdown. An example of one method is to add an acid feed to these cooling towers which could reduce the water usage by approximately 30%. The cooling towers located at the SLO Downtown Central Plant would have estimated water consumption of 758,160 gallons per year, which is a total calculated water savings of 322,920 gallons per year. The cooling tower located at the SLO Health Campus Central Plant would have estimated water consumption of 421,200 gallons per year, which is a total calculated water savings of 179,400 gallons per year.

Parks

Parks has implemented several in-house projects that have helped to achieve water savings in all districts. Reduction of turf in multiple park areas has contributed to this effort. In instances of non-usable turf areas, lawn has been removed, irrigation systems reconfigured, certain irrigation heads capped and mulch added to preserve moisture.

The irrigation systems have been evaluated and modified to improve irrigation coverage by adding sprinkler heads in some areas to create better uniformity and cut down on irrigation cycles, changed sprinkler nozzles to increase coverage and prevent overspray and also adjusted irrigation water schedules to prevent water runoff. Some park areas have been re-landscaped with lower water using plant material and drip irrigation systems where feasible. Parks has two certified water auditors on staff. These rangers have trained other staff to inspect irrigation valves, heads and lines and make timely repairs to conserve water.

In an effort to reduce water usage overall by 20% this water season, Parks staff will be implementing the following:

1. Adjust irrigation controllers to reduce water.
2. Use deeper rooted grass seed when over seeding sports fields.
3. Install a Central Computerized Irrigation control system at Nipomo Park alerting staff to water leaks and automatically shutting down as well as using local ET rates to adjust watering cycles with the utmost accuracy.
4. Implement a deep aeration program on turf allowing for water penetration in soil and topdressing to hold in moisture.
5. Implement a comprehensive water schedules in some cases applying ample water to important infrastructure such as sports fields for organized sports recreation and in other areas a higher reduction to achieve an overall parks wide reduction schedule
6. Test various “wetting agents” on turf to aid with moisture retention.
7. Inspect for irrigation leaks and perform timely repairs.
8. Adjust irrigation head nozzles to achieve optimal water distribution.

Golf

Golf has also implemented several water saving processes. The largest is golf courses are using reclaimed water rather than potable water. In addition they have Computerized Irrigation Systems operating that allow for optimized irrigation scheduling and minimal water waste. Most golf course irrigation is also a valve in head style which allows each individual sprinkler head to be programed for a specific water cycle.

Golf staff either has, or, will be, implementing the following:

1. Use weather station ET data to program irrigation water schedules with the utmost accuracy.
2. Inspect for irrigation leaks and perform timely repairs.
3. Use of syringe techniques (watering with a hose by hand) as appropriate to better control watered areas rather than turning on overhead sprinklers.
4. Reduce irrigation in fairway and rough areas to 50% of daily ET.
5. Use wetting agents to hold moisture in the soil profile.
6. Educate customers of the improved playing surfaces by reducing water to create a more firm and less green colored golf course.