

Water Management Practices

Water Efficiency Landscaping

Operations and Maintenance

To maintain water efficiency in operations and maintenance, ECS will:

- Landscape irrigation schedule according to California Irrigation Management Information System (CIMIS) data.
- Quarterly review all landscape service and maintenance to incorporate a high priority for water, chemical, and energy efficiency.
- Add mulch twice a year to plant beds and all unpaved areas on campus. Mulch decreases water lost from soil through evaporation and helps reduce weed growth.
- Maintain a sufficient quantity of topsoil rich in organic matter, four to six inches, to capture storm water as it falls and to release moisture back to plants over time. The result reduces irrigation requirements.
- Aerate soil seasonally in turf areas and landscape beds that introduces oxygen into the soil's deep layers and breaks up compacted soil. This allows water to penetrate deeply into the soil, producing a healthier root system.
- Recirculate water in living stream. Install timer shut off these features when possible to reduce evaporation losses. Check water recirculation systems annually and after rain storms for leaks and other damage.
- Alternate turf mowing height between low and high levels. This encourages roots to grow deeply and allows plants to go longer between watering sessions.
- Keep irrigated landscape weed free so valuable water is consumed only by decorative landscape.
- Avoid using water to clean sidewalks, driveways, parking lots, decks, and other hardscapes.
- Add compost, organic soil or an organic matter to soil as necessary, to improve soil conditions and water retention.
- Avoid watering on windy and hot days when possible. Plant watering will be done during the early AM or late PM hours.
- Use soaker hoses to water gardens and flower beds.
- Check Cistern and rain barrels for any repair needs. Incorporated harvested rainwater into watering plan.
- Post water usage data.
- User water cans and nozzles for watering plants

Leak Detection, and Repair

Operations and Maintenance

The following operations and maintenance (O&M) options help ECS installations minimize leaks in a distribution system:

- Manage pressure in the system to ensure that optimal levels are maintained. High pressure causes wear and tear on the system causing new leaks and increasing loss rates.
- Install meters in different areas or zones of the system to monitor flow rates. Manage metered data by setting flow rate thresholds. When exceeded, indicate possible system leaks. Data collected from metering zones will be shared with classes.

Toilets and Urinals

Operation and Maintenance

- Check for leaks every six months and monthly for high used areas.
- Establish a user-friendly method to report leaks and fix them immediately.
- Establish a system for students to report leaks anonymously.
- Encourage cleaning or custodial crews to report problems.
- Periodically replace flush valves and fill valves in tank-type toilets.
- When performing maintenance, replace worn parts and adjust mechanisms to ensure that the water consumed per flush meets manufacturer equipment specifications.
- If non-water urinals are used, clean and replace the sealant, cartridges or material in accordance with manufacturer recommendations.

Faucets

Operation and Maintenance

- For restrooms install faucets or faucet aerators or laminar flow devices that achieve 0.5 gpm flow rate, required by plumbing codes.
- For kitchen faucet retrofits, install aerators or laminar flow devices that achieve a flow rate of 2.2 gpm.
- Establish a user-friendly method to report leaks and fix them immediately.
- Encourage cleaning or custodial crews to report problems.
- Test system pressure to make sure it is between 20 and 80 psi. If the pressure is too low, high-efficiency devices won't work properly. If it is too high, the faucet will consume more than their rated amount of water.
- Install expansion tanks and pressure reducing valves and reduce water heater settings where appropriate to prevent temperature and pressure relief valves from discharging water.
- Post energy/water awareness information to encourage efficiency from users.

Boiler Systems

Operation and Maintenance Options

- Develop and implement a boiler tuning program to be completed a minimum of once per operating year.
- Provide proper insulation on piping and the central storage tank.
- Obtain the services of a water treatment specialist to prevent system scale and corrosion and to optimize cycles of concentration.
- Develop and implement routine inspections and maintenance programs on condensate pumps.
- Regularly clean and inspect boiler water and fire tubes. Reducing scale buildup improves heat transfer and the system energy efficiency.
- Employ an expansion tank to temper boiler blowdown drainage rather than cold water mixing.
- Install meters on boiler system make up lines. Blowdown (the periodic or continuous removal of water from a boiler to remove accumulated dissolved solids and/or sludge) is a common mechanism to reduce contaminant build-up. Proper control of blowdown is critical to boiler operation. Insufficient blowdown may lead to deposits or carryover. Excessive blowdown wastes water, energy, and chemicals.
- Install meters on make-up lines to recirculating closed water loop heating systems so that leaks can easily be detected.
- Boiler system will be shut down during summer time.