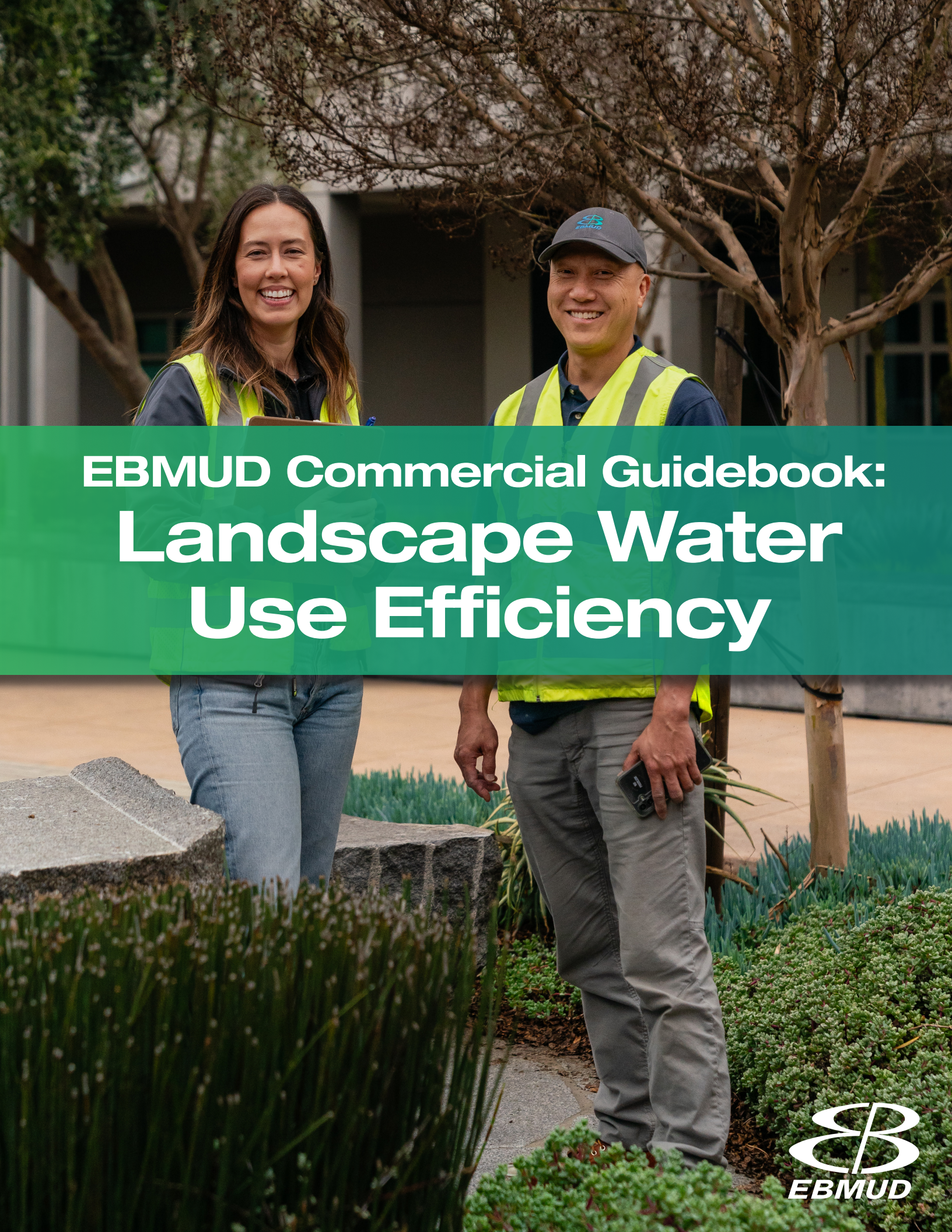


EBMUD Commercial Guidebook: Landscape Water Use Efficiency

EBMUD

LANDSCAPE WATER USE EFFICIENCY

This section will provide information on EBMUD and California regulations regarding landscape irrigation and design, as well as cost-effective approaches to manage a water efficient landscape, including water management tools, irrigation, design, and maintenance.

In California, outdoor irrigation efficiency can be a significant contributor to a site's water use and should be considered in any water management plan.

The U.S. Environmental Protection Agency (EPA) indicates that, "As much as 50 percent of the water we use outdoors is lost due to wind, evaporation, and runoff caused by inefficient irrigation methods and systems.[1]" Therefore, focusing on increasing landscape water use efficiency is an integral part of a wider water conservation strategy at any landscaped commercial facility.

Irrigation Survey

If a customer suspects that a landscape is using more water than it should, a professional landscape survey can be a valuable primary intervention. Surveys can include:

- An evaluation of historic water use
- Inspection of irrigation equipment
- Review of irrigation scheduling
- Review of applicable utility rebates

EBMUD offers free commercial irrigation surveys to water customers and has also partnered with several non-profit organizations[2,3] to assist customers in hiring experienced and reputable landscape professionals.

Landscape with Climate-Appropriate Plants

Programming an Irrigation Controller

1 *https://www.epa.gov/watersense/when-its-hot*
2 *https://qwel.net/*
3 *https://rescape.memberclicks.net/directory*

Converting from spray to drip irrigation has been shown to reduce water use by **30-40%** compared to spray in residential settings.[4]

Irrigation System Review

There are many ways to reduce water use in the commercial landscape and still maintain healthy plant material:

- Check out EBMUD's irrigation tips to save water and resolve common irrigation problems such as:
  - Broken or misdirected sprinklers
  - Clogged or leaking drip irrigation
  - Leaking or stuck irrigation valves
  - Irrigation runoff from lawn or groundcover
- Review the watering schedule and adjust your irrigation controller for the weather and season.
- Consider investing in irrigation system improvements such as self-adjusting controllers, flow sensors, master valves, high efficiency nozzles, drip irrigation and pressure regulators to reduce inefficient water application – these upgrades may be eligible for rebates with your local water provider.

Landscape Design

If the property includes large sections of turf, consider replacing lawn with climate appropriate plants to reduce water use and support local ecosystems. Many property owners are saving water and money by removing non-functional turf. For example, an HOA in Alameda, California, converted turf on median strips and reduced water use by more than 70%.

For low water use landscape design ideas check out online gallery, design templates, and demonstration gardens. Seek out a resource such as Alameda County's Lawn to Garden water savings calculator to estimate savings for a lawn conversion project on your site.

Select plants appropriate to your local climate and check out your water utility's webpage for localized lists and resources. In the San Francisco Bay Area, residents can use EBMUD's list of Top 100 plants and EBMUD's WaterSmart Plants webpage. Remember to group plants together based on their watering needs (hydrozoning), and make sure to add 3" layer of mulch to retain moisture and protect plant health.

Pressure Regulator on an Irrigation Line

Whether you are trying to improve water management, fix broken irrigation, or create a new design, there may be times when site managers may need additional resources. Check out EBMUD's hiring a landscape professional page for how to select a professional. For a comprehensive CII guidebook for site managers, see the Pacific Institute's Sustainable Landscapes Guidebook.

Ordinances and Regulations

Local water conservation and water waste regulations

EBMUD, like most water utilities, requires an evergreen baseline of water efficient practices from its customers in order to "conserve the District's water supply for the greatest public benefit." 1 Proper water use is guided by Section 29 of the utility's Water Use Restrictions, which outline prohibited uses of potable (as opposed to recycled) water. Readers not located in EBMUD's service area should consult their local water utility's water use regulations for more information.

4 *https://www.waterrf.org/research/projects/residential-end-uses-water-version-2*

Prohibited potable water use for non-residential customers includes:

- Single pass cooling systems in new connections, and non-recirculating systems in all new conveyer car wash and commercial laundry systems.
- Applying potable water to sidewalks, driveways, or other hard surfaces or materials that results in excessive use and runoff.
- Non-recirculating ornamental fountain or other decorative water feature.
- Use of potable water for construction, street cleaning, soil compaction and dust control, if a feasible alternative source of water is available. EMBUD permit required for all potable water use for construction, soil compaction and dust control.

Additional water efficient guidelines for non-residential customers include:

- Use systems that recycle water where feasible.
- Measurable leaks with water flows onto adjacent property or hardscapes shall not be turned on or restored to service until repairs have been completed.
- Hotels and motels are required to prominently and clearly offer patrons the option of not having their towels and linens washed daily.

The Model Water Efficient Landscape Ordinance (MWELO)

MWELO is a statewide water conservation regulation in California for new and rehabilitated developments that promotes low water use landscapes. The implementation of and compliance with MWELO will help to secure EBMUD and statewide water supply for long-term planning and growth.

MWELO applies to single- and multi-family residential, commercial, public, and institutional projects that require a permit, plan check, a new water meter, change in water meter size, or business classification with:

- Construction of 500 square feet or more of new landscaping (E.g., building a new home on a lot) .OR
- Rehabilitation or remodeling of landscaping where the total existing landscape is over 2,500 square feet (e.g., constructing a pool and redoing landscaping.

Sprinkler Spray Bodies

An additional landscape regulation concerning Spray Sprinkler Bodies (SSB) went into effect on October 1, 2020. After this date, all newly manufactured SBB are required to be certified by the California Energy Commission's (CEC) appliance efficiency database known as the "Modernized Appliance Efficiency Database" before being offered for sale in California. Compliant SSB contain pressure regulating devices and adhere to a flow rate and pressure performance criteria including a minimum outlet pressure.

Non-Functional Turf Ban

In the fall of 2023, Assembly Bill 1572 was passed prohibiting the use of potable water to irrigate non-functional turf located on commercial, industrial, and institutional (CII) properties. The legislation will replace a temporary non-functional turf irrigation ban enacted in June 2022 by California's State Water Board and will be phased in beginning January 1, 2027.[6]

Non-functional turf is ornamental grass not used for recreation, civic and/or other community events. It includes turf irrigated for aesthetics such as street medians and parking lots

In October 2023, California Governor Gavin Newsom signed into law **AB 1572, prohibiting irrigation of non-functional* turf with potable water at Commercial, Industrial and Institutional (CII) sites**. This law, already in place as an extended Drought Emergency Regulation, will go into effect in tiered phases, **starting in 2027**.

*Non-functional turf is defined as "[Turf] that is solely ornamental and not regularly used for human recreational purposes or for civic or community events. Non-functional turf does not include sports fields and turf that is regularly used for human recreational purposes or for civic or community events.[5]

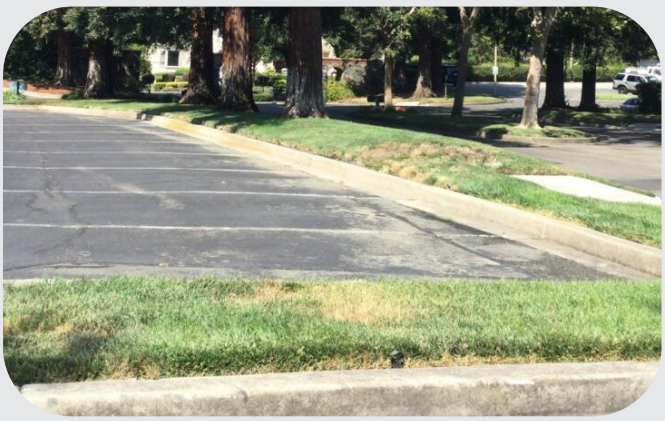
5 *https://www.cvwd.org/597/Non-Functional-Turf-FAQs*
6 *https://calwep.org/california-lawmakers-approve-non-functional-turf-ban/*

Example of Inefficient Overhead Spray Irrigation

The irrigation ban applies to CII properties including those below, but not limited to:

- City and county land
- Educational institutions
- Government, public agency buildings
- Grocery and retail stores
- Homeowner association owned properties and common interest developments
- Hospitals
- Office, warehouse, and industrial buildings
- Religious institutions
- Restaurants

Example of Non-Functional Turf in a Parking Lot.



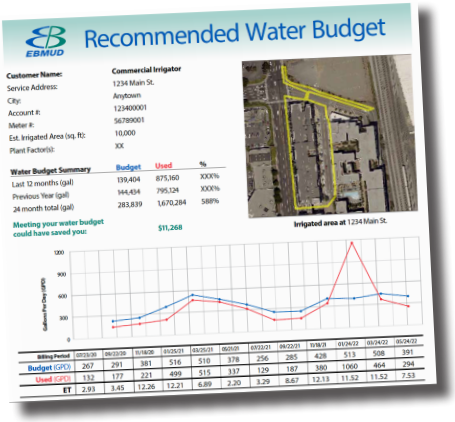
Compliance will be phased in beginning January 1, 2027:

- State, local government, and public agency buildings beginning January 1, 2027.
- Institutional properties and all commercial and industrial properties, beginning January 1, 2028.
- All common areas of properties of homeowners' associations, and common interest developments, beginning January 1, 2029.
- All properties owned by local governments, local public agencies, and public water systems in a disadvantaged community, beginning January 1, 2031, or when funding is available.

Water Management Tools

As an EBMUD customer, consider using these four information-based water management tools to irrigate efficiently.

Water Budget Reports



EBMUD provides free [water budget reports to commercial customers](#) with dedicated irrigation meters. The water budget compares actual water consumption with target water consumption tailored to the site's landscape area, location, and plant type. The water budget provides a high-level overview of how effectively water is managed at the landscape.

My Water Report Portal

EBMUD customers can also sign up online for the [My Water Report](#) program, which grants free access to historical water use history, billing information, leak detection tips, and more. Select water customers with "smart" meters can also edit their communication preferences to include leak alerts and high use notifications to address costly leaks in a timely manner. Water budgets and leak alerts helped a recent customer fix a 300 gallon per hour leak, saving nearly $1,250 per day.

Flowmeters

The majority of EBMUD meters are read every two months. Therefore, the Water Conservation Division recommends customers install a flowmeter to more closely monitor water use with up-to-the-minute water use data. Flowmeters measure and report water use down to a fraction of a gallon, with updates as frequent as every minute. They can alert customers to leaks, as well as be configured to send alerts through a web portal or mobile app. EBMUD provides rebates for this technology and also displays a list of approved devices.

Recommendations

Follow the principles of water-efficient landscaping, including:

- Plan and design based on your space (sun, shade, soil, slope, size etc.) and needs
- Conduct regular irrigation system maintenance (quarterly or bi-annually)
- Regularly check your irrigation system for leaks (monthly)
- Frequently review your irrigation schedule. Adjust the schedule seasonally, or install a smart irrigation controller for automatic daily adjustments
  - EBMUD rebate available
  - Sample irrigation schedule
- Upgrade to more efficient irrigation equipment like drip irrigation, high efficiency sprinkler nozzles, and smart irrigation controllers
  - EBMUD rebates available
- Choose water efficient and native plants
- Hydrozone: group plants in irrigation zones based on water needs
- Don't leave any bare soil – maintain a healthy layer of mulch around plants
  - EBMUD coupons available
- Test and amend your soil for optimal plant health
- Consider turf alternatives, or use turf sparingly and appropriately

Resources

1. *https://calwep.org/wp-content/uploads/2021/03/Drip-Irrigation-PBMP-2014.pdf*
2. *https://calwep.org/wp-content/uploads/2021/03/Turf-Removal-PBMP-2013.pdf*
3. *https://www.epa.gov/sites/default/files/2017-09/documents/ws-products-spec-ssb.pdf*
4. *https://www.epa.gov/sites/default/files/2017-01/documents/ws-outdoor-water-efficient-landscaping.pdf*
5. *https://www.epa.gov/watersense/watersense-labeled-controllers*
6. *https://www.ebmud.com/water/conservation-and-rebates/watersmart-gardener/hiring-landscape-professional*
7. *https://www.ebmud.com/water/conservation-and-rebates/watersmart-gardener/lawn-garden-design-center*
8. *https://www.ebmud.com/water/conservation-and-rebates/water-efficiency-review*
9. *https://www.ebmud.com/water/conservation-and-rebates/watersmart-gardener/magic-mulch*
10. *https://www.ebmud.com/water/conservation-and-rebates/watersmart-gardener/sustainable-landscape-map*
11. *https://www.ebmud.com/water/conservation-and-rebates/watersmart-gardener/watersmart-plants*
12. *https://www.ebmud.com/water/conservation-and-rebates/watersmart-gardener/lawn-goodbye-landscape-gallery*
13. *https://www.ebmud.com/water/conservation-and-rebates/rebates/irrigation-equipment-rebate*
14. *www.ebmud.com/application/files/4915/6642/6964/Lawn__Landscape_Watering_Schedule.pdf*
15. *https://www.ebmud.com/water/conservation-and-rebates/watersmart-irrigation-programs/commercial-irrigation-water-conservation-tips*
16. *https://www.ebmud.com/water/conservation-and-rebates/watersmart-gardener/plants-and-landscapes-summer-dry-climates*
17. *https://lawntogarden.org/water-savings-calculator*
18. *https://www.nrdc.org/bio/ed-osann/new-ca-lawn-sprinkler-standards-huge-water-energy-savings*
19. *https://plantmaster.com/presents/plants.php?id=5f736fa6604d7*
20. *https://pacinst.org/wp-content/uploads/2020/08/Sustainable-Landscapes-in-California-Pacific-Institute-2020.pdf*
21. *https://www.savingwaterpartnership.org/programs_list/landscape-design-templates/*
22. *https://water.ca.gov/Programs/Water-Use-And-Efficiency/Urban-Water-Use-Efficiency/Model-Water-Efficient-Landscape-Ordinance*

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