

San Francisco's Water Efficient Irrigation Ordinance

Tier 2 Commonly Used Terms

Automatic irrigation controller: an automatic timing device used to remotely control valves that operate an irrigation system. Automatic irrigation controllers schedule irrigation events using either evapotranspiration (weather-based) or soil moisture data.

Certificate of Landscape Completion: the document required after the landscape and irrigation have been installed. The Certificate of Completion is submitted to the SFPUC with the irrigation audit, the landscape and maintenance schedule and the irrigation schedule.

Certified irrigation designer: a person certified to design irrigation systems by an accredited academic institution, a professional trade organization, or other program such as the US Environmental Protection Agency's WaterSense Partners irrigation designer certification program and the Irrigation Association's Certified Irrigation Designer program.

Certified landscape irrigation auditor: a person certified to perform landscape irrigation audits by an accredited academic institution, a professional trade organization, or other program such as the US Environmental Protection Agency's WaterSense irrigation auditor certification program and the Irrigation Association's Certified Landscape Irrigation Auditor program.

Estimated Total Water Use (ETWU): the total water used for the landscape.

ET adjustment factor (ETAF): a factor of 0.7, that, when applied to reference evapotranspiration, adjusts for plant factors and irrigation efficiency, two major influences upon the amount of water that needs to be applied to the landscape. A combined plant mix with a site-wide average of 0.5 is the basis of the plant factor portion of this calculation. For purposes of the ETAF, the average irrigation efficiency is 0.71. Therefore, the ET Adjustment Factor is $(0.7) = (0.5/0.71)$. ETAF for a Special Landscape Area shall not exceed 1.0. ETAF for existing non-rehabilitated landscapes is 0.8.

ET_o or reference evapotranspiration: a standard measurement of environmental parameters which affect the water use of plants. ET_o is expressed in inches per day, month, or year and is an estimate of the evapotranspiration of a large field of four- to seven-inch tall, cool-season grass that is well watered. Reference evapotranspiration is used as the basis of determining the Maximum Applied Water Allowance so that regional differences in climate can be accommodated.

Existing landscape area: a landscape area of any size that has not been rehabilitated or constructed within the previous 12 months.

First construction document: the first building permit issued for a project or, in the case of a site permit, the first building permit addendum issued or other document that authorizes construction of the project. "First construction document" shall not include permits or addenda for demolition, grading, shoring, pile driving, or site preparation work.

Hydrozone: a portion of the landscaped area having plants with similar water needs. A hydrozone may be irrigated or non-irrigated.

Irrigation audit: an in-depth evaluation of the performance of an irrigation system conducted by a Certified Landscape Irrigation Auditor. An irrigation audit includes, but is not limited to: inspection, system test with distribution uniformity or emission uniformity, precipitation rates, reporting deficiencies in the system, reporting overspray or runoff that causes overland flow, and preparation of an irrigation schedule. An irrigation audit may include suggested upgrades, current estimated water usage, and suggested system upgrades.

Irrigation efficiency (IE): the measurement of the amount of water beneficially used divided by the amount of water applied. Irrigation efficiency is derived from measurements and estimates of irrigation system characteristics and

management practices. The minimum average irrigation efficiency for purposes of this ordinance is 0.71. Greater irrigation efficiency can be expected from well designed and maintained systems.

Landscape architect: a person who holds a license to practice landscape architecture in the state of California pursuant to California Business and Professions Code.

Landscape area: all the planting areas, turf areas, and water features in a landscape design plan subject to the Maximum Applied Water Allowance calculation, including any adjacent planted areas in the public right-of-way for which the property owner is responsible pursuant to the Section 400.1 or Section 805 of the Public Works Code. The landscape area does not include footprints of buildings or structures unless the footprints include planted areas such as living roofs. The landscape area also does not include sidewalks, driveways, parking lots, decks, patios, gravel or stone walks, other pervious or non-pervious hardscapes, and other non-irrigated areas designated for non-development such as open spaces and existing native vegetation.

Landscape contractor: a person licensed by the State of California to construct, maintain, repair, install, or subcontract the development of landscape systems.

Landscape Documentation Deadline: the date by which Tier 1 or Tier 2 documentation must be submitted for approval by the General Manager. This date shall be not more than 100 days after the issuance of the first construction document, or as determined by the General Manager in consultation with the Director of Department of Building Inspection.

Landscape Documentation Package: the documents required for Tier 2 compliance; includes: landscape design plan, irrigation design plan, grading plan, soil analysis, and water budget worksheets.

Landscape rehabilitation project or rehabilitated landscape: includes any modifications to landscape areas over a 12-month period at a site that cumulatively exceeds 1,000 square feet. A landscape rehabilitation project or rehabilitated landscape does not include turf replacements on sports fields where the turf replaced provides a playing surface, routine weeding, brush removal where no new plant materials are installed, seasonal plantings, and areas dedicated solely to edible plants. A rehabilitated landscape does not include landscape areas where only the irrigation system is retrofitted for the use of recycled water and only plantings that restore areas disturbed by the recycled water retrofits are installed. Recycled water irrigation retrofit projects shall employ best management practices to prevent runoff, ponding and overspray as directed in their recycled water use permit and comply with all applicable local and state regulation.

Low water use plants or climate appropriate plants: plants, shrubs, groundcovers or tree species that meet at least one of the following conditions.

- The species has a water use ranking of “low” or “very low” in Region 1 (North-Central Coast) as established in the California Department of Water Resources 2000 publication “Water Use Classification of Landscape Species” or subsequent editions as it may be updated.
- The species has a water use ranking of “no water”, “little water,” or “little to moderate water” in the climate zone for the planting location as established in the Sunset Western Garden Book, Eighth Edition, published by Oxmoor House on February 1, 2007 or subsequent editions as it may be updated.
- The plantings are part of an engineered stormwater management feature approved by the General Manager pursuant to the San Francisco Stormwater Design Guidelines established by the Public Utilities Commission.
- The Department of Public Works, the Recreation and Park Department, or the General Manager has determined that the species, when watered for sufficient plant health and appearance, is low water use based on the agency’s experience with the species, and the agency has added the species to the Low Water Use and Climate Appropriate Plant List maintained by the General Manager.
- The species appears on the San Francisco Street Tree Species List established by the Department of Public Works Bureau of Urban Forestry.
- The planting is part of a species test approved by the Department of Public Works or the Recreation and Park Department.

- The species has been permitted at the site by the Department Public Works or the General Manager based on wet soil conditions stemming from proximity to naturally occurring water features such as a high water table, springs, ponds, lakes, creeks, and wetlands.

Maximum Applied Water Allowance (MAWA): the amount of annual applied water established by the San Francisco Public Utilities Commission for a landscaped area, using state mandated formulas and accounting for local climatic conditions, that serves as an upper limit for lawful water use for irrigating landscaped areas. The MAWA is based upon the area's reference evapotranspiration, the ET Adjustment Factor, and the size of the landscape area. The Estimated Total Water Use shall not exceed the Maximum Applied Water Allowance. Special Landscape Areas, including recreation areas, areas permanently and solely dedicated to edible plants such as fruit and nut trees and vegetable gardens, and areas irrigated with gray water or harvested rainwater, are subject to the MAWA with an ETAF not to exceed 1.0.

New construction landscape project: the total area of landscape in the project as defined in "landscape area," and the modified landscape area for a landscape rehabilitation project.

Plant factor or plant water use factor: a factor that, when multiplied by ETo, estimates the amount of water needed by plants. The plant factor range for low water use plants is 0 to 0.3, the plant factor range for moderate water use plants is 0.4 to 0.6, and the plant factor range for high water use plants is 0.7 to 1.0. Plant factors for any plant shall be as established in the Department of Water Resources 2000 publication "Water Use Classification of Landscape Species" or subsequent additions. Plants used in the landscape project that are not found in WUCOLS shall use the plant factor of a similar species included on WUCOLS.

Project applicant: the person or entity applying for approval of a landscape project for a new construction project or a landscape rehabilitation project. A project applicant may be the property owner or his or her designee.

Rain sensor: a rain sensing shutoff device that automatically suspends an irrigation event when it rains.

Recycled water, reclaimed water, gray water, or harvested rain water: non-potable water suitable for uses such as landscape irrigation or water features. This water is not intended for human consumption.

Soil moisture sensor: a device that measures the amount of water in the soil. The device may also suspend or initiate an irrigation event.

Special Landscape Area (SLA): an area of the landscape dedicated solely to edible plants, areas irrigated all or in part with gray water or harvested rain water, water features using only harvested rain water, and areas dedicated to active play such as parks, sports fields, golf courses, and where turf provides a playing surface.

Turf: a ground cover surface of mowed grass, including but not limited to Annual bluegrass, Kentucky bluegrass, Perennial ryegrass, Red fescue, Tall fescue, Bermudagrass, Kikuyugrass, Seashore Paspalum, St. Augustinegrass, Zoysiagrass, and Buffalo grass.

Water feature: a design element where open water performs an aesthetic or recreational function. Water features include artificial ponds, lakes, waterfalls, and streams, and fountains, spas, and swimming pools. The surface area of water features is included in the high water use hydrozone of the landscape area. Constructed wetlands used for on-site wastewater treatment or stormwater best management practices that are not irrigated and used solely for water treatment or stormwater retention are not water features and, therefore, are not subject to the water budget calculation.

WUCOLS: the Water Use Classification of Landscape Species published by the University of California Cooperative Extension, the Department of Water Resources and the Bureau of Reclamation, 2000, or subsequent editions as it may be updated.