

**YOLO COUNTY ZONING CODE
TITLE 8 LAND DEVELOPMENT**

**CHAPTER 3: WATER EFFICIENT
LANDSCAPING ORDINANCE**

Sec. 8-3.101 Purpose

The purpose of this Ordinance is to add provisions to the Yolo County Code to address permitting requirements for water efficient landscaping. These changes are necessary to reflect changes in California law (Assembly Bill 1881, Government Code Section 65591 et seq., and Executive Order No. B-29-15) and to promote the conservation and efficient use of water. These changes are also necessary and appropriate to implement the Yolo County General Plan.

Sec. 8-3.102 Definitions

For the purposes of this Chapter, unless otherwise apparent from the context, certain words and phrases used in this Chapter are defined as follows:

Backflow prevention device

Backflow prevention device means a safety device used to prevent pollution or contamination of the water supply due to the reverse flow of water from the irrigation system.

California Invasive Plant Inventory

California Invasive Plant Inventory means the California Invasive Plant Inventory maintained by the California Invasive Plant Council.

Check valve or anti-drain valve

Check valve or anti-drain valve means a valve located under a sprinkler head, or other location in the irrigation system, to hold water in the system to prevent drainage from sprinkler heads when the sprinkler is off.

Community garden

Community garden means a piece of property or area of a property that is dedicated solely to edible plants and gardened by a cooperative group of people living in the area.

Community water system

Community water system means a public water system which serves at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents.

Distribution uniformity

The measure of the uniformity of irrigation water over a defined area.

Developer-installed

Developer-installed means a landscape project installed by or under the direction of the developer of a development project.

Ecological restoration project

Ecological restoration project means a project, where the primary function of such project is to assist in the recovery of an ecosystem that has been degraded, damaged, or destroyed. For purposes of this ordinance, restoration focuses on establishing the composition, structure, pattern, and ecological processes necessary to make terrestrial and aquatic ecosystems sustainable, resilient, and healthy under current and future conditions.

Estimated Total Water Use (ETWU)

Estimated Total Water Use (ETWU) means the total water used for the landscape. The ETWU is calculated based on the plants used and irrigation method selected for the landscape design. ETWU must be below the MAWA.

ET adjustment factor (ETAF)

ET adjustment factor (ETAF) means, except for special landscape areas, a factor of 0.55 for residential areas and 0.45 for non-residential areas, 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. The ETAF for new and existing (non-rehabilitated) special landscape areas shall not exceed 1.0. The ETAF for existing non-rehabilitated landscapes is 0.8.

Evapotranspiration or ETo

Evapotranspiration or ETo means a standard measurement of environmental parameters that affect the water use of plants, and is an estimate of the Evapotranspiration of a large field of four-to seven-inch tall, cool-season grass that is well watered.

Graywater

Untreated wastewater that has not been contaminated by any toilet discharge, has not been affected by infectious, contaminated, or unhealthy bodily wastes, and does not present a threat from contamination by unhealthful processing, manufacturing, or operating wastes. Graywater includes, but is not limited to, wastewater from bathtubs, showers, bathroom washbasins, clothes washing machines, and laundry tubs, but does not include wastewater from kitchen sinks or dishwashers. Health and Safety Code Section 17922.12. All graywater systems shall conform to the California Plumbing Code (Title 24, Part 5, Chapter 16) and any applicable local ordinance standards.

Head to head coverage

Head to head coverage means full coverage from one sprinkler head to the next.

Homeowner-provided landscaping

Homeowner-provided landscaping means any landscaping either installed by a private individual for a single family residence or installed by a licensed contractor hired by a homeowner.

Hydrozone

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

Invasive plant species

Invasive plant species means species of plants not historically found in California that spread outside cultivated areas and can damage environmental or economic resources. Lists of invasive plants are maintained at the California Invasive Plant Inventory and USDA invasive and noxious weeds database.

Irrigation audit

Irrigation audit means 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 tune-up, system test with distribution uniformity or emission uniformity, reporting overspray or runoff that causes overland flow, and preparation of an irrigation schedule. The audit must be conducted in a manner consistent with the Irrigation Association's Landscape Irrigation Auditor Certification program or other U.S. Environmental Protection Agency "Watersense" labeled auditing program.

Irrigation efficiency (IE)

Irrigation efficiency (IE) means 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 irrigation efficiencies for purposes of this ordinance are 0.75 for overhead spray devices and 0.81 for drip systems.

Landscape area

Landscape area means all the planting areas, turf areas, and water features in a landscape design plan subject to the Maximum Applied Water Allowance calculation. The landscape area does not include footprints of buildings or structures, 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 (e.g., open spaces and existing native vegetation, non-irrigated orchards or vineyards).

Landscape contractor

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

Landscape project

Landscape project means total area of landscape in a project as defined in landscape area for the purposes of this ordinance, meeting requirements under Section 8-3.103 (Applicability).

Low volume irrigation

Low volume irrigation (also point source irrigation) means the application of irrigation water at low pressure through a system of tubing or lateral lines and low-volume emitters such as drip, drip lines, and bubblers. Low volume irrigation systems are specifically designed to apply small volumes of water slowly at or near the root zone of plants.

Low-head drainage

Low-head drainage means water that flows out of the system after the valve turns off due to elevation changes within the system.

Master shut-off valve

An automatic valve installed at the irrigation supply point which controls water flow into the irrigation system. When this valve is closed, water will not be supplied to the irrigation system. A master valve will greatly reduce any water loss due to a leaky station valve.

Maximum Applied Water Allowance (MAWA)

Maximum Applied Water Allowance (MAWA) means the upper limit of annual applied water for the established landscaped area. It is based upon the area's reference evapotranspiration, the ET Adjustment Factor (ETAF), and the size of the landscape area. The Estimated Total Water Use shall not exceed the Maximum Applied Water Allowance.

Mined-land reclamation projects

Mined-land reclamation projects means any surface mining operation with a reclamation plan approved in accordance with the Surface Mining and Reclamation Act of 1975.

Mulch

Mulch means any organic material such as leaves, bark, straw, compost, or inorganic mineral materials such as rocks, gravel, and decomposed granite left loose and applied to the soil surface for the beneficial purposes of reducing evaporation, suppressing weeds, moderating soil temperature, and preventing soil erosion.

New construction and/or new development

New construction and/or new development means, for the purposes of this ordinance, a new building or structure with a landscape, or other new landscapes, such as a park, playground, or greenbelt without an associated building.

Overhead irrigation system

Overhead irrigation system means a system that delivers water through the air (e.g., spray heads and rotors).

Overspray

Overspray means the irrigation water which is delivered beyond the target area.

Pervious

Pervious means any surface or material that allows the passage of water through the material and into underlying soil.

Plant factor

Plant factor is a factor, when multiplied by ETo, estimates the amount of water needed by plants. For purposes of this ordinance, the plant factor range for very low water use plants is 0 to 0.1, the plant factor range for low water use plants is 0.1 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 cited in this ordinance are derived from the publication "Water Use Classification of Landscape Species." Plant factors may also be obtained from horticultural researchers from academic institutions or professional associations as approved by the California Department of Water Resources (DWR).

Point source irrigation

See low volume irrigation.

Precipitation rate

Precipitation rate means the rate of application of water measured in inches per hour.

Rain sensor

Rain sensor means a component which automatically suspends an irrigation event when it rains.

Recycled water

Recycled water means treated or recycled waste water of a quality suitable for non-potable uses such as landscape irrigation and water features. This water is not intended for human consumption.

Rehabilitated landscape

Rehabilitated landscape means any re-landscaping project that requires a permit, plan check, or design review, meets the requirements of Section 8-3.103 (Applicability), and the modified landscape area is equal to or greater than 2,500 square feet.

Runoff

Runoff means water which is not absorbed by the soil or landscape to which it is applied and flows from the landscape area. For example, runoff may result from water that is applied at too great a rate (application rate exceeds infiltration rate) or when there is a slope.

Special Landscape Area (SLA)

Special Landscape Area (SLA) means an area of the landscape dedicated solely to edible plants (food producing gardens), areas irrigated with recycled water, water features using recycled water, storm water detention basins, and areas dedicated to active play such as parks, sports fields, golf courses, and where turf provides a playing surface.

Subsurface irrigation

Subsurface irrigation means an irrigation device with a delivery line and water emitters installed below the soil surface that slowly and frequently emit small amounts of water into the soil to irrigate plant roots.

Swing joint

Swing joint means an irrigation component that provides a flexible, leak-free connection between the emission device and lateral pipeline to allow movement in any direction and to prevent equipment damage.

Turf

Turf means a ground cover surface of mowed grass. Annual bluegrass, Kentucky bluegrass, Perennial ryegrass, Red fescue, and Tall fescue are cool-season grasses. Seashore Paspalum, St. Augustinegrass, Zoysiagrass, and Buffalo grass are warm-season grasses. The meaning of turf does not include landscape areas planted with non-irrigated native California grasses.

Water feature

Water feature means a design element where open water performs an aesthetic or recreational function. Water features include ponds, lakes, waterfalls, fountains, artificial streams, spas, and swimming pools (where water is artificially supplied). 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.

Sec. 8-3.103 Applicability

- (a) The provisions of this Chapter shall apply to all of the following landscape projects that are provided in conjunction with and/or required as part of a building permit, grading permit, discretionary permit, or site plan review:
 - (1) New developer-installed construction and/or development projects with an aggregate landscape area equal to or greater than 500 square feet;
 - (2) Rehabilitated landscape projects with an aggregate landscape area equal to or greater than 2,500 square feet.

- (b) The provisions of this Chapter shall also apply to the following landscape projects with significant water needs:
 - (1) Existing landscapes equal to or greater than one acre, with a dedicated water meter. Such landscapes are limited to preparing a water efficient landscape worksheet in accordance with the specifications in the Landscape Documentation Package (see Section 8-3.104, Submittal Requirements). If water use exceeds the Maximum Applied Water Allowance, the property owner shall consult the Community Services Department for recommendations to reduce water use and to prevent water waste.
 - (2) New and rehabilitated cemeteries. Recognizing the special landscape management needs of cemeteries, new and rehabilitated cemeteries shall require the preparation of a water efficient landscape worksheet and submittal of a Certificate of Completion. Existing cemeteries are limited to (1) above.

- (c) The provisions of this Chapter shall not apply to the following:
 - (1) Registered local, State or federal historical sites;
 - (2) Ecological restoration and similar projects that do not require permanent irrigation systems
 - (3) Mined-land reclamation projects that do not require permanent irrigation systems;
 - (3) Mined-land reclamation projects that do not require permanent irrigation systems;
 - (4) Existing plant collections, as part of botanical gardens, arboretums, and nature centers open to the public;
 - (5) Community gardens; and
 - (6) New or rehabilitated homeowner provided landscapes, unless required by a discretionary permit.

Sec. 8-3.104 Submittal requirements

- (a) Prior to commencing construction on a landscape project subject to the provisions of this Chapter, a Landscape Documentation Package shall be submitted to the County for review and approval.

- (b) The Landscape Documentation Package shall be filed with the Community Services Department on a County approved application form. The Landscape Documentation Package application shall include all required fees and/or deposits, and all plans, specifications, and submittals required by the Department, including but not limited to:

- (1) General project information;
- (2) A water efficient landscape worksheet;
- (3) A soil management report;
- (4) A landscape and grading design plan; and
- (5) An irrigation design plan.

Sec. 8-3.105 Approval

The Landscape Documentation Package application shall only be approved after the Planning Director verifies that the proposed landscape project complies with the provisions of this Chapter, other applicable provisions of this code, and any applicable conditions of a discretionary permit or other entitlement.

Sec. 8-3.106 Certificate of Completion

- (a) Following installation of landscaping subject to the provisions of this Chapter, the project applicant shall submit a Certificate of Completion to the Community Services Department for review and final approval.
- (b) Prior to issuance of a certificate of occupancy or final building or grading permit, the Certificate of Completion shall be submitted to the Community Services Department on a form prescribed by the Planning Director that shall include the following information and documentation:
 - (1) General project information;
 - (2) A certificate of Installation; and
 - (3) A copy of the landscape irrigation audit.

Sec. 8-3.107 Permit issuance and enforcement

- (a) Upon successful completion of the Certificate of Completion, the County shall notify the property owner/project applicant of its approval.
- (b) The County may conduct inspections for the purpose of enforcing this Ordinance and, as necessary and appropriate, may utilize any of the enforcement mechanisms set forth in the Yolo County Code or otherwise authorized by law to address violations.

Sec. 8-3.108 Landscaping standards

All landscape projects subject to the provisions of this Chapter shall comply with the following landscaping standards:

- (a) Plant selection and grouping.
 - (1) Any plant may be selected for the landscape, providing the Estimated Total Water Use (ETWU) in the landscape area does not exceed the Maximum Applied Water Allowance (MAWA), and that the plants meet the specifications set forth in (2), (3), (4), and (5) below.

- (2) With the exception of Special Landscape Areas, a minimum 25% of landscape area shall be comprised of native plants.
- (3) Plants having similar water needs shall be grouped together in distinct hydrozones. Within distinct hydrozones, plants of moderate and low water use, or moderate and high water use can be mixed, so long as the plant factor of the higher water using plant is used for calculations. High water use plants shall not be mixed with low water use plants.
- (4) Plants shall be selected appropriately based on their adaptability to the climate, geologic, and topographical conditions of the site. Protection and preservation of existing native California species and natural areas is encouraged.
- (5) The use of invasive plant species, as listed in the California Invasive Plant Inventory produced by the California Invasive Plant Council, or as determined by the Director of Community Services, is prohibited.
- (6) Fire prevention needs shall be addressed in fire-prone areas. A defensible space or zone around a building or structure is required per Public Resources Code Section 4291(a) and (b).
- (7) High water use plants, characterized by a plant factor of 0.7 to 1.0, are prohibited in street medians.

(b) Turf requirements.

- (1) Turf shall be used wisely and in response to functional needs and shall not be planted if the ETWU exceeds the MAWA.
- (2) Turf shall not comprise greater than 25% of the front yard landscape area of developer-installed single-family landscaping.
- (3) With the exception of Special Landscape Areas, turf shall not comprise greater than 30% of non-residential landscaped area.
- (4) Turf shall not be planted on slopes exceeding 25% where the toe of the slope is adjacent to or within four feet of an impermeable hardscape (rise divided by run x 100 = slope percent).

(c) Soil Amendments, conditioning, and mulching.

- (1) Prior to the planting of any materials, compacted soils shall be transformed to a friable condition. On engineered slopes, only amended planting holes need meet this requirement.
- (2) A minimum three inch layer of mulch shall be applied on all exposed soil surfaces of planting areas except in turf areas, creeping or rooting groundcovers, or direct seeding applications.
- (3) Stabilizing mulching products shall be used on slopes that meet current engineering standards.
- (4) Soil amendments shall be incorporated according to recommendations of the soil management report. and what is appropriate for the plants selected.
- (5) For landscape installations, compost at a rate of a minimum of four cubic yards per 1,000 square feet of permeable area shall be incorporated to a depth of six inches into the soil. Soils with greater than 6% organic matter in the top six inches of soil are exempt from adding compost and tilling.

(d) Water features.

- (1) Recirculating water systems shall be used for all water features.

- (2) The surface area of a water feature shall be indicated on the landscape plans and included in the high water use hydrozone area of the water budget calculation.
 - (3) Recycled water shall be used for decorative water features when available on site.
- (e) Stormwater Management.
- (1) The landscape project area shall be graded so that all irrigation and normal rainfall remains within the property lines and does not drain on to non-permeable hardscapes.
 - (2) Rain gardens, cisterns, and other landscape features and practices that increase rainwater capture and create opportunities for infiltration and/or onsite storage are recommended.
 - (3) Soil compaction in landscape areas is prohibited unless required by the geotechnical or engineering report.

Sec. 8-3.109 Irrigation requirements

All landscape projects subject to the provisions of this Chapter shall comply with the following irrigation requirements:

- (a) Irrigation system.
- (1) All irrigation systems shall be designed and installed to meet irrigation efficiency criteria as described in the Maximum Applied Water Allowance.
 - (2) Backflow prevention devices shall be required to protect the water supply from contamination by the irrigation system.
 - (3) Manual shut-off valves shall be required, as close as possible to the point of connection of the water supply, to minimize water loss in case of an emergency.
 - (4) Weather-based self-adjusting irrigation controllers with rain sensors shall be required.
 - (5) Pressure regulators and/or booster pumps shall be installed so that all components of the irrigation system operate at the manufacturer's recommended optimal pressure.
 - (6) Irrigation systems shall be designed to prevent runoff or overspray onto non-targeted areas, such as adjacent property, non-irrigated areas, hardscapes, roadways, or structures.
 - (7) Point source irrigation is required where plant height at maturity will affect the uniformity of an overhead irrigation system.
 - (8) Low volume irrigation is required in mulched planting areas.
 - (9) Areas less than ten feet in width in any direction shall be irrigated with subsurface irrigation or other means that produces no runoff or overspray.
 - (10) Overhead irrigation shall not be permitted within 24 inches of any non-permeable surface unless the irrigation audit confirms no overspray or runoff occurs.
 - (11) Slopes greater than 15 percent shall be irrigated with point source or other low-volume irrigation technology.
 - (12) Sprinkler heads, rotors, and other emission devices on one valve shall have matched precipitation rates, unless otherwise directed by the manufacturer's specifications.

- (13) Head to head coverage shall be required unless otherwise directed by the manufacturer's specifications.
- (14) Swing joints or other riser protection components shall be required on all risers subject to damage that are adjacent to hardscapes or in high traffic areas of turf.
- (15) Check valves or anti-drain valves shall be required on all sprinkler heads where low point drainage could occur.
- (16) When landscape projects are services by a community water system, landscape water meters, defined as either a dedicated water service meter or private submeter, shall be installed for all non-residential irrigated landscapes of 1,000 square feet but not more than 5,000 square feet (the level at which Water Code 535 applies) and residential irrigated landscapes of 5,000 square feet or greater. A landscape water meter may be either a customer service meter dedicated to landscape use provided by the local water purveyor; or a privately owned meter or submeter.
- (17) Master shut-off valves are required on all projects except landscapes that make use of technologies that allow for the individual control of sprinklers that are individually pressurized in a system equipped with low pressure shut down features.
- (18) Flow sensors that detect high flow conditions created by system damage or malfunction are required for all non-residential landscapes and residential landscapes of 5000 square feet or larger.
- (19) All irrigation emission devises must meet the requirements set in the American National Standards Institute (ANSI) standard, American Society of Agricultural and Biological Engineers'/International Code Council's (ASABE/ICC) 802-2014 "Landscape Irrigation Sprinkler and Emitter Standard." All sprinkler heads installed in the landscape must document a distribution uniformity low quarter of 0.65 or higher using the protocol defined in ASABE/ICC 802-2014.

(b) Hydrozones.

- (1) Irrigation systems that serve trees shall be exclusively low volume type, and shall be placed on separate valves except when planted in turf areas. The mature size and extent of the root zone shall be considered when designing irrigation for the tree.
- (2) Distinct hydrozones shall be irrigated with separate valves.
- (3) Sprinkler heads and other emission devices shall be selected based on what is appropriate for the plant type within that hydrozone.

Sec. 8-3.110 Public education

Education is a critical component to promote the efficient use of water in landscapes. The use of appropriate principles of design, installation, management and maintenance that save water is encouraged throughout Yolo County.

- (a) Literature and resources. The Yolo County Community Services Department shall make available information to the general public regarding the design, installation, management, and maintenance of water efficient landscapes based on a water budget.
- (b) Model homes. Landscaping shall be installed, in compliance with this Chapter, for all model homes in subdivisions where a Final Subdivision Map has been approved by the

County. The landscaping for model homes shall incorporate the policies of this Chapter and the developer shall include the following:

- (1) Signs that identify the model home landscaping as an example of a water efficient landscape featuring elements such as hydrozones, irrigation equipment, and others that contribute to the overall water efficient theme. Signage shall include information about the site water use as designed per this Chapter; specify who designed and installed the water efficient landscape; and demonstrate low water use approaches to landscaping such as using native plants, graywater systems, and rainwater catchment systems.
- (2) Literature shall be provided to anyone touring a model home that describes the design, installation, management, and maintenance of water efficient landscapes.