

**ORDINANCE NO. 10-02**

**AN ORDINANCE OF SOQUEL CREEK WATER DISTRICT ESTABLISHING  
WATER CONSERVATION IN LANDSCAPING REGULATIONS**

THIS ORDINANCE is adopted in light of the following facts and circumstances, which are hereby found and declared by the Soquel Creek Water District (“the District”) Board of Directors:

WHEREAS, a reliable supply of potable water is essential to the public health, safety and welfare of the people and economy of the District.

WHEREAS, the District is located in a semi-arid region and is solely dependent upon groundwater sources. Factors such as drought, groundwater overdraft, seawater intrusion, development, climate change, and environmental and regulatory concerns affect our region’s water reliability and make the region highly susceptible to water supply shortages.

WHEREAS, careful water management requires active water conservation measures, not only in times of drought but at all times, in order to help ensure a reliable supply of water to meet current and future water supply needs.

WHEREAS, Article X, Section 2 of the California Constitution and Section 100 of the California Water Code declare that the general welfare requires water resources be put to beneficial use, waste or unreasonable use or unreasonable method of use of water be prevented, and conservation of water be fully exercised with a view to the reasonable and beneficial use thereof.

WHEREAS, the California Water Conservation in Landscaping Act, also known as the State Landscape Model Ordinance (“Model Ordinance”), has been implemented by a Statewide Landscape Task Force which was overseen by the California Urban Water Conservation Council. The California Water Conservation in Landscaping Act was amended pursuant to AB 2717 (Chapter 682, Stats. 2004) and AB 1881 (Chapter 559, Stats. 2006).

WHEREAS, The Board of Directors finds and determines that this Ordinance is consistent with the provisions requiring reductions in outdoor water use for landscaping in the California Green Building Standards Code, as such provisions will be implemented in the coming years. Such requirements include the development of a water budget for landscape irrigation in accordance with methodology outlined in either the Model Ordinance or pursuant to a locally adopted ordinance.

WHEREAS, the District has the power to perform all acts necessary to fully carry out the provisions of the County Water District Law (Water Code Section 31001), may establish rules and regulations for the distribution and use of water supplies (Water Code Section 31024), may adopt and enforce a comprehensive water conservation program to reduce potable water consumption and conserve supplies (Water Code Section 375), and may require as a condition of new service, that reasonable water-saving devices and water reclamation devices be installed to reduce water use (Water Code Section 31035).

WHEREAS, the District has followed the procedures for notice, public participation and adoption set forth in Sections 375 and 31027 of the California Water Code.

WHEREAS, the Board of Directors finds and determines that this Ordinance is not subject to the California Environmental Quality Act (Public Resources Code Section 2100 et seq.) (“CEQA”) pursuant to Section 15307 (the activity assures the maintenance, restoration, enhancement, or protection of a natural resource) and Section 15378(b)(2) (the activity is not a project as it involves general policy and procedure making) of the State CEQA Guidelines, California Code of Regulations, Title 14, Chapter 3, since it makes and implements policies and procedures to ensure that water resources are conserved by reducing water consumption through the establishment of a structure for planning, designing, installing, maintaining and managing water-efficient landscapes.

WHEREAS, the adoption and enforcement of this Ordinance is necessary to manage the Soquel Creek Water District’s potable water supply and to avoid or minimize the effects of groundwater overdraft, seawater intrusion, and drought within the District.

WHEREAS, this Ordinance rescinds Soquel Creek Water District Resolution No. 05-15, Establishing Water Use Efficiency Requirements for New Development, as related to outdoor water use.

WHEREAS, as changes in outdoor water efficiency technology occur over time and provide opportunities to conserve water, or hydrologic conditions or regulatory requirements change, or as deemed necessary, this Ordinance may be revised or modified by Resolution.

NOW, THEREFORE, THE BOARD OF DIRECTORS OF THE SOQUEL CREEK WATER DISTRICT DOES ORDAIN AS FOLLOWS:

**I. Title**

THIS ORDINANCE shall be known as the Soquel Creek Water District Water Conservation in Landscaping Ordinance.

**II. Definitions**

For the purpose of this Ordinance, the following words shall have the meanings set forth below:

- A. “applied water” means the portion of water supplied by the irrigation system to the landscape.
- B. “automatic self-adjusting irrigation controller” means an automatic timing device used to remotely control valves that operate an irrigation system using evapotranspiration (weather-based) and/or soil moisture (sensor-based) data.
- C. “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.
- D. “CCF” means one hundred cubic feet, a common billing unit used by water agencies for basing charges for water service. One hundred cubic feet equal 748 gallons.
- E. “certified irrigation designer” means 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 irrigation designer certification program and Irrigation Association’s Certified Irrigation Designer program.
- F. “certified landscape irrigation auditor” means 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 Irrigation Association’s Certified Landscape Irrigation Auditor program.

- G. “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.
- H. “common area” means those areas in a residential development that are shared and available for use by all residents.
- I. “community garden” means a plot of land used by a community group and open to the public for the cultivation of flowers, vegetables, edible plants, or fruit.
- J. “conversion factor (0.62)” means the number that converts one inch of water per square foot to gallons of water.
- K. “drip irrigation” means any non-spray low volume irrigation system utilizing emission devices with a flow rate measured in gallons per hour. Low volume irrigation systems are specifically designed to apply small volumes of water slowly at or near the root zone of plants.
- L. “ecological restoration project” means a project where the site is intentionally altered to establish a defined, indigenous, historic ecosystem.
- M. “emitter” means a drip irrigation device that delivers water slowly from the system to the soil.
- N. “establishment period” means the first year after installing the plant in the landscape. Typically, most plants are established after one year of growth.
- O. “Estimated Total Water Use” (ETWU) means the total water used for the landscape as calculated in the Water Allowance Calculation Worksheets.
- P. “ET adjustment factor” (ETAF) means a factor 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 District ETAF is set at 0.6.
- Q. “evapotranspiration rate” means the quantity of water evaporated from adjacent soil and other surfaces and transpired by plants during a specified time.

- R. “expanded service” means an additional water meter or larger capacity meter is required to serve the existing or proposed development, as determined by Soquel Creek Water District.
- S. “flow rate” means the rate at which water flows through pipes, valves and emission devices, measured in gallons per minute, gallons per hour, or cubic feet per second.
- T. “functional landscape designs” means landscapes that require turf in order to serve a recreational purpose (i.e., parks, sports fields and golf courses).
- U. “hardscapes” means any durable material (pervious and non-pervious).
- V. “hydrozone” means a portion of the landscaped area having plants with similar water needs. A hydrozone may be irrigated or non-irrigated.
- W. “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, identifying overspray or runoff that causes overland flow, and preparing an irrigation schedule.
- X. “irrigation efficiency” (IE) means 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 71%. Greater irrigation efficiency can be expected from well-designed and maintained systems.
- Y. “landscape architect” means a person who holds a license to practice landscape architecture in California as further defined by the California Business and Professions Code, Section 5615.
- Z. “landscape area” means all the planting areas, turf areas, and water features in a landscape design plan subject to the landscape water budget or Maximum Applied Water Allowance calculations. 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, or other non-irrigated areas designated for non-development (e.g., open spaces and existing native vegetation).

- AA. “Landscape Project Application” means the documents required for submittal under Section V(A) of this Ordinance, and as specified in the Landscape Project Application Submittal Requirements Package.
- BB. “landscape water budget” means the upper limit of annual applied water for the established landscaped area, otherwise referred to as the Maximum Applied Water Allowance (MAWA). It is based on the region’s reference evapotranspiration, type of plant material, and landscape area as specified in Sections IV(C)(i) and V(D)(ii).
- CC. “landscape contractor” means a person licensed by the State of California to construct, maintain, repair, install, or subcontract the development of landscape systems.
- DD. “landscape project” means the total area comprising the landscape area, as defined in this Ordinance.
- EE. “lateral line” means the water delivery pipeline that supplies water to the emitters or sprinklers from the valve.
- FF. “local agency” means a city, county, or water agency that is responsible for adopting and implementing this Ordinance. The local agency is also responsible for the enforcement of this Ordinance, including but not limited to, in the case of a city or county, approval of a permit and plan check or design review of a project; and in the case of a water agency, approval of a new or expanded water service application.
- GG. “low volume 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.
- HH. "low water use plant" means a plant species whose water needs are compatible with local climate and soil conditions. Species classified as "very low water use" and "low water use" by Water Use Classification of Landscape Species (*WUCOLS*), having a regionally adjusted *plant factor* of 0.0 through 0.3, shall be considered low water use plants.
- II. “Maximum Applied Water Allowance” (MAWA) means the upper limit of annual applied water for the established landscape area as specified in Section V(D)(ii) and calculated in Water Allowance Calculation Worksheet. It is based upon the area’s reference evapotranspiration, the ET adjustment factor, and the size of the landscape area.

- JJ. “Model Water Efficient Landscape Ordinance” means the regulations developed by the California Department of Water Resources as required by the California Water Conservation in Landscaping Act and contained in the California Code of Regulations, Title 23, Division 2, Chapter 2.7.
- KK. “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.
- LL. “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.
- MM. “new development” means the construction of a new building or structure containing a landscape or other new land improvement, such as a park, playground, or greenbelt without an associated building.
- NN. “overhead sprinkler irrigation systems” means systems that deliver water through the air (e.g., spray heads and rotors).
- OO. “overspray” means the irrigation water which is delivered beyond the target area.
- PP. “pervious” means any surface or material that allows the passage of water through the material and into the underlying soil.
- QQ. “plant factor” or “plant water use factor” is a factor, when multiplied by the reference evapotranspiration (ET<sub>o</sub>), estimates the amount of water needed by plants. For purposes of this Ordinance, 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 cited in this Ordinance are derived from *WUCOLS*.
- RR. “precipitation rate” means the rate of application of water measured in inches per hour.
- SS. “project applicant” means the individual or entity submitting information required under this Ordinance. A project applicant may be the property owner or his or her designee.
- TT. “rain sensor” or “rain sensing shutoff device” means a component which automatically suspends an irrigation event when it rains.

- UU. “recreational area” means areas dedicated to active play such as parks, playgrounds, sports fields, and golf courses where turf provides a playing surface.
- VV. “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.
- WW. “reference evapotranspiration” or “ET<sub>o</sub>” means a standard measurement of environmental parameters which affect the water use of plants. ET<sub>o</sub> 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 MAWA so that regional differences in climate can be accommodated.
- XX. “rehabilitated landscape” means any project that is required to modify its existing landscape as a condition of a land use approval or a discretionary use permit or any re-landscaping project that requires a permit, plan check, design review, or a new or expanded water service application.
- YY. “runoff” means water which is not absorbed by the soil or landscape to which it is applied and flows from the landscape onto other areas.
- ZZ. “soil moisture sensing device” or “soil moisture sensor” means a device that measures the amount of water in the soil. The device may also suspend or initiate an irrigation event.
- AAA. “Special landscape area” (SLA) means an area of the landscape dedicated solely to edible plants, areas irrigated with recycled water, water features using recycled water and areas dedicated to active play such as parks, sports fields, golf courses, and where turf provides a playing surface.
- BBB. “sprinkler head” means a device which delivers water through a nozzle.
- CCC. “static water pressure” means the pipeline or municipal water supply pressure when water is not flowing.
- DDD. “station” means an area served by one valve or by a set of valves that operate simultaneously.
- EEE. “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.

- FFF. “turf” means a ground cover surface of mowed grass that requires frequent watering during the growing season. Annual bluegrass, Kentucky bluegrass, Perennial ryegrass, Red fescue, and Tall fescue are cool-season grasses. Bermuda grass, Kikuyu grass, Seashore Paspalum, St. Augustine grass, Zoysia grass, and Buffalo grass are warm-season grasses. Although water-conserving species exist within both cool and warm-season grasses, warm-season grasses generally require less water in our local climate.
- GGG. “valve” means a device used to control the flow of water in the irrigation system.
- HHH. “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).
- III. “WUCOLS” means 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.

### III. Applicability

- A. The provisions of this Ordinance shall apply to all of the following new development projects that request **new** water service:
- i. New single-family (one and two-unit) residences as follows:
    - a. New single-family residential development projects on a parcel of land less than 10,000 square feet are classified as **Tier I** residential projects and shall be required to meet the provisions listed in Section IV.
    - b. New single-family residential development projects on a parcel of land equal to or greater than 10,000 square feet are classified as **Tier II** residential projects and shall be required to meet the provisions listed in Section V. The project applicant may subtract square footage for areas with recorded easements or other restrictions imposed by land use permit that prohibit building and irrigation from the parcel size to determine applicability under this Ordinance.
  - ii. New multi-family (three or more dwelling units) residential development projects shall comply with Section V.
  - iii. New commercial, industrial, and public development projects shall comply with Section V.
  - iv. New recreation areas including schoolyards, parks, playgrounds, sports fields and golf courses are subject to all the provisions of Section V of this Ordinance, with the exception of turf area limits, provided that recycled water, graywater and/or rainwater use is implemented where feasible.
  - v. New community gardens will be evaluated on a case-by-case basis to determine applicable requirements. New residential fruit and/or vegetable gardens grown for personal use are subject to all the applicable provisions of this Ordinance, with the exception of the high water use plant area limits.

- B. The provisions of this Ordinance shall apply to all of the following **existing** development:
  - i. Existing development of any type that is requesting new or expanded water service shall be required to comply with the applicable provisions of this Ordinance, as determined by the criteria used above in III(A) for new development of the same type.
  - ii. Existing development of any type that is required to rehabilitate or modify their landscape as part of a land use approval/design review process shall be required to comply with the applicable provisions of this Ordinance, as determined by the criteria used above in III(A) for new development of the same type. However, the required provisions shall only apply to the portion of the landscape to be rehabilitated or modified.
  - iii. Existing landscapes that were installed before the effective date of this Ordinance and are equal to or greater than one acre in size, including existing cemeteries, shall be subject only to the provisions for existing landscapes listed in Section VI.
- C. The provisions of this Ordinance shall not apply to:
  - i. Ecological restoration or mined-land reclamation projects that do not require a permanent irrigation system.
  - ii. Plant collections, as part of botanical gardens open to the public.
  - iii. Registered local, state, or federal historical sites where landscaping establishes an historical landscape style, as determined by a public board or commission responsible for architectural review or historic preservation, if exempt by law.
- D. A landscape plan review fee may be established and modified by resolution and in accordance with applicable State law.

#### **IV. Tier I Single-Family Residential Requirements**

##### **A. Landscape Review and Approval Required**

A complete Tier I Outdoor Water Use Efficiency Checklist must be submitted and found to satisfy the requirements of this Ordinance before water service can be activated (or water service continued in the case of existing development). The District shall notify the applicant in writing if submittals are found to be incomplete or inconsistent with

the requirements and indicate where such additions or revisions are necessary.

B. Persons Qualified to Prepare and Sign Required Submittals

A Tier I Outdoor Water Use Efficiency Checklist shall be completed by and bear the signature of the registered property owner **or** a certified irrigation designer, certified landscape irrigation auditor, licensed landscape architect, licensed landscape contractor, licensed professional engineer, or any other person authorized by the State to do this work.

C. Landscape Water Conservation Standards

i. Landscape Water Budget Calculation

The project applicant shall calculate a landscape water budget that can be used in the future as a baseline in order to gauge efficient outdoor water usage at the site. The landscape water budget shall be calculated using the formula provided in the Tier I Outdoor Water Use Efficiency Checklist.

ii. General Limits

The combined area of turf, high water use plants and water features (including swimming pools), shall not exceed more than 25% of the total landscape area. The remaining landscape shall only utilize low to moderate water use plants, as identified in Water Use Classification of Landscape Species (WUCOLS), or other species, including native plants that are well-adapted to the climate of the region and require minimal water once established.

iii. Turf Limits

a. Turf shall not be planted in the following conditions:

- Planting areas less than 8 feet wide in any direction; and
- On slopes greater than 12%.

b. Turf varieties shall be water-conserving species with a WUCOLS plant factor of less than or equal to 0.6, which are classified as low to moderate water use. If a WUCOLS plant factor is not available, contact District Staff prior to installation.

iv. Landscape Design

- a. Plants shall be grouped by their water needs (low, moderate or high water use as defined by WUCOLS) and planted in distinct hydrozones. Hydrozones that mix plants requiring different amounts of water are not allowed.
- b. Only low water use plants shall be used on slopes exceeding 33%.

v. Water Features

- a. Water in decorative pools, ponds, fountains and other water features must be recirculated.
- b. Automatic-fill valves shall not be used with water features, including but not limited to, swimming pools and ponds.
- c. Covers are required for swimming pools and spas.

vi. Irrigation Design and Equipment

- a. Private irrigation submeters between the point of connection on the domestic water service and the first irrigation valve are recommended to facilitate water management.
- b. All irrigation systems shall be designed to avoid runoff, overspray, low head drainage and other similar conditions where water flows off-site on to non-targeted areas, such as adjacent property, non-irrigated areas, hardscapes, roadways or structures.
- c. The irrigation system shall be designed to ensure that the dynamic pressure at each emission device is within the manufacturer's recommended pressure range for optimal performance. A pressure regulator is recommended if pressure at the water meter exceeds 80 pounds per square inch (psi).
- d. Low-volume, non-spray irrigation shall be used on all non-turf areas.
- e. Overhead sprinkler systems shall not be permitted within 24 inches of any non-permeable surface, including driveways and sidewalks. The setback area may be planted or unplanted. Allowable irrigation within the setback may include drip, subsurface, or other low volume, non-spray irrigation

technology. The surfacing of the setback may be mulch, gravel, or other porous material.

- f. All overhead spray nozzles shall have a precipitation rate of no more than 0.75 inches per hour.
- g. Sprinkler heads and other emission devices shall have matched precipitation rates, unless otherwise directed by the manufacturer's recommendations.
- h. Manual shut-off valves are required, as close as possible to the point of connection to the water supply, to minimize water loss during an emergency or routine repair.
- i. Swing joints or other riser protection components are recommended on all risers located adjacent to high traffic areas.
- j. Check valves or anti-drain valves are required at the lowest point(s) on each valve run.
- k. The use of automatic, self-adjusting irrigation controllers (i.e., weather or sensor-based) is recommended.
- l. If installed, all automatic irrigation controllers shall have multiple programming capabilities and an automatic rain shut-off device.
- m. Plants that require different amounts of water shall be grouped in distinct hydrozones and irrigated using separate irrigation circuits.
- n. Each valve shall irrigate a hydrozone with similar site, slope, sun exposure, soil conditions, and plant materials with similar water use.
- o. Where feasible, trees shall be watered using separate irrigation circuits.

#### vii. Irrigation Scheduling

- a. Irrigation shall be avoided during windy, freezing or rainy weather.
- b. It is recommended that irrigation scheduling be regulated by automatic, weather-based or other sensor-based self-adjusting irrigation controllers.

- c. Overhead irrigation shall be scheduled between 8:00 p.m. and 10:00 a.m. unless unfavorable weather prevents it or other water use restrictions are enforced consistent with a declared use curtailment.
- d. After the plant establishment period (one year), the irrigation schedule shall be reduced in frequency and duration to conserve water.
- e. Watering schedules shall be adjusted periodically to reflect seasonal variations in plant water requirements.

viii. Landscape and Irrigation Maintenance

- a. Irrigation systems shall be inspected regularly to correct misaligned, clogged or broken heads, missing heads and risers, stuck valves, and leaks. If an irrigation meter or submeter is installed, it shall be read periodically to check consumption and detect any leakage.
- b. Irrigation equipment shall be maintained in good working condition and properly adjusted to ensure water efficiency. Any broken or malfunctioning equipment, including but not limited to main and lateral lines or control valves shall be repaired promptly with identical or improved equipment to maintain the original design integrity.
- c. A project applicant is encouraged to implement sustainable or environmentally-friendly practices for overall landscape maintenance.

ix. Soil Management

- a. Soil conditioning shall include six (6) cubic yards of organic amendment for each 1,000 square feet of topsoil.
- b. A minimum three (3) 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 seedling areas.

x. Stormwater Management/Hardscapes

- a. Stormwater best management practices should be implemented into grading plans and landscape design plans to minimize runoff and to increase on-site water retention and infiltration,

and shall be consistent with city and county stormwater management requirements.

- b. Rain gardens, cisterns, and other landscape features and practices that increase rainwater capture and create opportunities for infiltration and/or onsite storage are recommended.
- c. Where possible and practical, it is recommended that all hardscape areas, including driveways, be constructed of pervious material(s).

xi. Alternative Water Sources

- a. Irrigating with alternative water sources such as rainwater and/or graywater is strongly encouraged where available onsite and permitted.
- b. All rainwater and graywater irrigation systems shall be designed and operated in accordance with all applicable local and State laws.

xii. Public Education

- a. All model homes that are landscaped shall use signs and written information to demonstrate the principles of water-efficient landscapes as required in the Tier I Outdoor Water Use Efficiency Checklist.
- b. Signs shall be used to identify the model as an example of a water-efficient landscape featuring elements such as hydrozones, irrigation equipment, and other elements that contribute to the overall water-efficient theme.
- c. Developers shall convey landscaping requirements to homeowner(s) at time of sale if any portion of the property remains unlandscaped.

**V. Tier II Single-Family Residential, Multi-Family Residential, and Commercial, Industrial and Public Development Requirements**

**A. Landscape Project Application Review and Approval Required**

A complete Landscape Project Application must be submitted and found to satisfy the requirements of this Ordinance before water service will be activated (or water service continued in the case of existing development). Detailed submittal requirements may be found in the Landscape Project Application Submittal Requirements Package. The District shall notify the applicant in writing if applications are found to be incomplete or inconsistent with the requirements and indicate where such additions or revisions are necessary.

**B. Persons Qualified to Prepare and Sign Landscape Project Application Submittals**

Landscape Project Applications shall be prepared by and bear the signature of a certified irrigation designer, a certified landscape irrigation auditor, a licensed landscape architect, a licensed landscape contractor, a licensed professional engineer, or any other person authorized by the state to do this work.

**C. Landscape Irrigation Audit and Report Requirements**

Upon installation and completion of the landscape, the applicant is responsible for having a certified irrigation auditor conduct an irrigation audit and submit a report to the District to verify that the landscape improvements were completed in accordance with approved applications. Detailed audit and reporting requirements are included in the Landscape Project Application Submittal Requirements Package. The Landscape Irrigation Audit Report shall be signed by a certified landscape irrigation auditor.

**D. Landscape Water Conservation Standards**

**i. Dedicated Landscape Water Meter**

- a. Dedicated landscape water meters are required to facilitate water management for all commercial, industrial and public development projects. Private irrigation submeters between the point of connection on the domestic water service and the first irrigation valve are recommended for Tier II single-family residential development to facilitate water management.

ii. Maximum Applied Water Allowance and Estimated Total Water Use

- a. The maximum applied water allowance (MAWA) shall be no more than 60 percent of reference evapotranspiration per square foot of landscaped area.
- b. The estimated total water use (ETWU) shall not exceed the MAWA.
- c. The MAWA assigned for a given irrigation account shall not be increased unless review of subsequent landscape plans has occurred and written approval of said plans has been obtained from the District.

iii. General Limits

- a. The combined area of turf, high water use plants and water features (including swimming pools), shall not exceed more than 25% of the total landscape area. The remaining landscape shall only utilize low to moderate water use plants, as identified in Water Use Classification of Landscape Species (WUCOLS) Guide, or other species, including native plants that are well-adapted to the climate of the region and require minimal water once established.
- b. This limit does not apply to recreation areas requiring large turf areas for their primary function, provided that rainwater, graywater and/or reclaimed water use is implemented where feasible. Recreation areas shall be designed to limit turf in any portion of the landscaped area not essential for the operation of the recreational facility.

iv. Turf Limits

- a. Turf shall not be planted in the following conditions:
  - Planting areas less than 8 feet wide in any direction;
  - On slopes greater than 12%; and
  - In street medians, traffic islands, planter strips, and parking lot islands.

- b. Turf varieties shall be water-conserving species with a WUCOLS plant factor of less than or equal to 0.6, which are classified as low to moderate water use. If a WUCOLS plant factor is not available, contact District staff prior to installation.

v. Landscape Design

- a. Plants shall be grouped by their water needs (low, moderate or high water use as defined by WUCOLS) and planted in distinct hydrozones. Hydrozones that mix plants requiring different amounts of water are not allowed.
- b. Only low water use plants shall be used on slopes exceeding 33%.

vi. Water Features

- a. The surface area of a water feature shall be included in the high water use hydrozone for the purposes of calculating a water allowance.
- b. Water in decorative pools, ponds, fountains and other water features must be recirculated.
- c. Automatic-fill valves shall not be used with water features, including but not limited to, swimming pools and ponds.
- d. Covers are required for swimming pools and spas.

vii. Irrigation Design and Equipment

- a. All irrigation systems shall be designed to prevent runoff, overspray, low head drainage and other similar conditions where irrigation water flows off-site on to non-targeted areas, such as adjacent property, non-irrigated areas, hardscapes, roadways, or structures.
- b. Irrigation systems shall be designed, maintained and managed to meet or exceed an average landscape irrigation efficiency of 71%.
- c. The irrigation system shall be designed to ensure that the dynamic pressure at each emission device is within the manufacturer's recommended pressure range for optimal performance.

- If the static pressure is above or below the required dynamic pressure of the irrigation system, pressure-regulating devices such as inline pressure regulators, booster pumps, or other devices shall be installed to meet the required dynamic pressure of the irrigation system.

- Static water pressure, dynamic or operating pressure, and flow of the water supply shall be measured at the point of connection. These pressure and flow measurements shall be conducted at the design stage. If the measurements are not available at the design stage, the measurements shall be conducted at installation.

- d. Automatic, self-adjusting controllers (i.e., weather or sensor-based) shall be used for irrigation scheduling. The controllers shall have multiple programming capabilities and an automatic rain shut-off device.
- e. Sensors (rain, freeze, wind, etc.), either integral or auxiliary, that suspend or alter irrigation during unfavorable weather conditions are required on all irrigation systems.
- f. Low-volume, non-spray irrigation shall be used on all non-turf areas.
- g. Overhead irrigation shall not be permitted within 24 inches of any non-permeable surface. The setback area may be planted or unplanted. Allowable irrigation within the setback from non-permeable surfaces may include drip, drip line, or other low-flow non-spray technology. The surfacing of the setback may be mulch, gravel, or other porous material.
- h. All overhead spray nozzles shall have a precipitation rate of no more than 0.75 inches per hour.
- i. Sprinkler heads and other emission devices shall have matched precipitation rates, unless otherwise directed by the manufacturer's recommendations.
- j. Head to head coverage is recommended. However, sprinkler spacing shall be designed to achieve the highest possible distribution uniformity using the manufacturer's recommendations.

- k. Swing joints or other riser-protection components are required on all risers subject to damage that are adjacent to high traffic areas.
- l. Check valves or anti-drain valves are required at the lowest point(s) on each valve run.
- m. 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 or routine repair.
- n. Backflow prevention devices shall be installed when dedicated landscape meters are required, to protect the water supply from contamination by the irrigation system.
- o. High flow sensors that detect and report high flow conditions created by system damage or malfunction are recommended.
- p. The design of the irrigation system shall conform to the hydrozones of the Landscape Project Application Design Plan.
- q. Each valve shall irrigate a hydrozone with similar site, slope, sun exposure, soil conditions, and plant materials with similar water use.
- r. Drip emitters or bubblers shall be installed at each tree. Bubblers are a maximum 1.5 gallons per minute and are placed on separate valves.

viii. Irrigation Scheduling

- a. The Monthly Irrigation Schedule Worksheet shall be completed and submitted with the Landscape Project Application.
- b. Irrigation scheduling shall be regulated by automatic irrigation controllers.
- c. Overhead irrigation shall be scheduled between 8:00 p.m. and 10:00 a.m. unless unfavorable weather prevents it or otherwise renders irrigation unnecessary.
- d. After the plant establishment period (one year), the irrigation schedule shall be reduced in frequency and duration to conserve water.

- e. Watering schedules shall be adjusted periodically to reflect seasonal variations in plant water requirements. Whenever possible, irrigation management shall incorporate the use of real-time, reference evapotranspiration (ET<sub>o</sub>) data from the California Irrigation Management Information System (CIMIS) or similar weather-based irrigation scheduling system.
- f. A copy of the Monthly Irrigation Schedule shall be provided to the person responsible for irrigation management at the site and a copy shall be posted on the project site near the irrigation controller.

ix. Landscape and Irrigation System Maintenance

- a. Irrigation systems shall be inspected regularly to correct misaligned, clogged or broken heads, missing heads and risers, stuck valves, and leaks. The irrigation meter shall be read periodically to check consumption and detect any leakage.
- b. Irrigation equipment shall be maintained in good working condition and properly adjusted to ensure water efficiency. Any broken or malfunctioning equipment, including but not limited to main and lateral lines or control valves shall be repaired promptly with identical or improved equipment to maintain the original design integrity.
- c. A regular landscape maintenance schedule is required and shall include, but is not limited to: aerating and dethatching turf areas; replenishing mulch; fertilizing; pruning; and weeding in all landscape areas.
- d. A project applicant is encouraged to implement sustainable or environmentally-friendly practices for overall landscape maintenance.

x. Soil Management, Preparation, and Mulching

- a. A minimum three (3) inch layer of mulch shall be applied to all exposed soil surfaces except in turf areas, creeping or rooting groundcovers, or direct seedling applications to minimize evaporation.

- b. Soil shall be prepared for planting by ripping and incorporating an organic amendment at the rate of six cubic yards per 1,000 square feet into the top six inches, or amended with organic material as recommended by landscape architect or soil laboratory report.

xi. Stormwater Management/Hardscapes

- a. Stormwater best management practices should be implemented into grading plans and Landscape Design Plans to minimize runoff and to increase on-site water retention and infiltration and shall be consistent with city and county stormwater management requirements.
- b. Rain gardens, cisterns, and other landscape features and practices that increase rainwater capture and create opportunities for infiltration and/or onsite storage are recommended.
- c. Where possible and practical, it is recommended that all hardscape areas, including driveways, be constructed of pervious material(s).

xii. Alternative Water Sources

- a. Irrigating with alternative water sources such as recycled water, rainwater and graywater is strongly encouraged where available onsite and permitted.
- b. All recycled water, rainwater and graywater irrigation systems shall be designed and operated in accordance with all applicable local and State laws.

xiii. Public Education

- a. All model homes that are landscaped shall use signs and written information to demonstrate the principles of water-efficient landscapes as required in the Tier II Outdoor Water Use Efficiency Checklist.
- b. Signs shall be used to identify the model 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.

- c. Developers shall convey landscaping requirements to home buyer during the property sale disclosure process if any portion of the property's available landscape area will remain unlandscaped at time of sale.

## **VI. Provisions for Existing Landscapes Over One Acre in Size**

The District will assign a landscape water budget to each existing landscape over one acre in size based on 70 percent of reference evapotranspiration, or 100 percent of reference evapotranspiration for recreation areas. When evaluation of these properties shows that annual water use exceeds the landscape water budget, the customer will be required to have a certified irrigation auditor perform a water audit and make recommendations as necessary to reduce water consumption consistent with the landscape water budget.

## **VII. Variances**

As technology changes and more information is available regarding plant materials, irrigation equipment and techniques, and maintenance techniques that enhance water conservation, the District may allow the substitution of well-designed conservation alternatives or innovations which equally reduce water consumption and meet the intent of this Ordinance.

## **VIII. Enforcement and Penalties**

### **A. Enforcement**

If an applicant for new, expanded or continued water service fails to comply with the provisions of this Ordinance, the District may require the applicant to resubmit a revised Tier I Outdoor Water Use Efficiency Checklist (Tier I single-family development only) or Landscape Project Application Package for approval and may withhold approval of the submittal and deny, limit or discontinue water service until the applicant complies with the terms of this Ordinance.

### **B. Violation and Notice of Correction**

It is unlawful for any person, firm, partnership, association, or corporation subject to the requirements of this Ordinance to fail to comply with the provisions of the Ordinance, or to alter or replace components and/or practices required by this Ordinance with other noncompliant components and/or practices after completion of new construction, landscape rehabilitation, or new or expanded water service connection.

- i. Whenever the Soquel Creek Water District determines that a violation of this Ordinance has occurred, the District may serve a notice of correction on the owner(s) of the property on which the violation is situated. The owner(s) of record shall have ninety (90) calendar days to take corrective action. If the violation is not corrected within ninety days, the District may pursue any of the following options:
  - a. The District may discontinue or limit water service, or upon conviction thereof, the person shall be punished by imprisonment in the county jail for not more than 30 days or by fine of not more than six hundred dollars (\$600), or by both the fine and imprisonment.

## **IX. Severability**

If any section, subsection, provision or part of this Ordinance, or its application to any person or circumstance, is held to be unconstitutional or otherwise invalid, the remainder of this Ordinance, and the application of such provision to other person or circumstances, shall not be affected thereby and shall remain in full force and effect and, to that end, the provisions of the Ordinance are severable.

**X. Effective Date**

This Ordinance shall become effective on August 18, 2010.

PASSED AND ADOPTED at a regular meeting of the Board of Directors of the Soquel Creek Water District held on August 17, 2010, by the following vote:

AYES: Director Bruce Daniels (Vice President), Director Don Hoernschemeyer, Director Bruce Jaffe, Director Daniel Kriege and Director Thomas LaHue (President)

NOES: None

ABSENT: None

s/Thomas LaHue  
PRESIDENT OF THE BOARD

ATTEST:

\_\_\_\_\_  
BOARD SECRETARY

This is to certify that the above is a true and correct copy of Ordinance 10-02, adopted by the Board of Directors of the Soquel Creek Water District on August 17, 2010.

By \_\_\_\_\_  
Shelley Flock, Staff Analyst

\_\_\_\_\_  
Date