LANDSCAPE PROJECT APPLICATION SUBMITTAL REQUIREMENTS PACKAGE

for

TIER II SINGLE-FAMILY RESIDENTIAL, MULTI-FAMILY RESIDENTIAL, COMMERCIAL, INDUSTRIAL and PUBLIC DEVELOPMENT

AS REQUIRED UNDER ORDINANCE NO. 16-03 WATER CONSERVATION IN LANDSCAPING ORDINANCE

Soquel Creek Water District, 5180 Soquel Drive, Soquel, CA 95010 Telephone: (831) 475-8500, Fax: (831) 475-4291

Instructions

1) A complete Landscape Project Application must be submitted and found to satisfy the requirements of Ordinance 16-03 before water service will be activated (or water service continued in the case of existing rehabilitated landscapes).

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.

Landscape Project Application Submittal Requirements include the following elements:

- □ **Project information, as requested in the Tier II Outdoor Water Use Efficiency Checklist.**
- □ **Tier II Outdoor Water Use Efficiency Checklist.**
- □ **Water Allowance Calculation Worksheet:**
  - □ Section I: Hydrozone Information Table
  - □ Section II: Water Budget Calculations
- □ **Landscape Design Plan including the following information:**
  - □ Appropriate scale and north arrow
  - □ Property lines, streets, and street names
  - □ Existing and proposed footprints of all buildings
  - □ Driveways, parking lots, sidewalks, retaining walls, and other hardscape (pervious and non-pervious) features
  - □ New and existing trees, shrubs, ground covers and turf areas within the developed landscape area
  - □ Planting legend indicating all plant species by botanical name and common name, spacing, and quantities of each type of plant by container size
  - □ Water use classification (high, moderate, low, or very low) for each plant material specified, according to WUCOLS

- □ Each hydrozone (including high, medium, low, and very low water uses) delineated and labeled, including the square footage for each
- □ Type of mulch and application depth
- □ Soil amendments, type and quantity
- □ Type and surface area of water features, if installed
- □ Type and surface area of Special Landscape Areas (e.g., recreational areas; areas permanently and solely dedicated to edible plants; areas irrigated with recycled water, rainwater and/or graywater), if installed
- □ Location of any stormwater management features that encourage on-site retention and infiltration (e.g., infiltration beds, swales, wetlands, retention ponds, etc.)
- □ Location of any rainwater harvesting or catchment technologies (e.g., rain gardens, cisterns, etc.) and graywater systems

□ **Irrigation System Design Plan including the following information:**

- □ Irrigation point of connection (POC) to water system
- □ Static water pressure at POC
- □ Location and size of dedicated landscape meter(s)
- □ Location of backflow prevention device
- □ Location of manual shut off valve(s)
- □ Location of master shut off valve(s)
- □ Location, size, and type of all components of the irrigation system, including automatic controllers, main and lateral lines, valves, sprinkler heads and nozzles, riser protection equipment, soil moisture sensors, pressure regulators, backflow prevention devices, drip and low volume irrigation equipment
- □ Flow rate (gallons per minute or gallons per hour), precipitation rate (inches per hour) and design operating pressure (psi) for each irrigation circuit
- □ Irrigation legend with the manufacturer's name, model number, and general description for all specified equipment, separate symbols for all irrigation equipment with different spray patterns, spray radius, and precipitation rates

- □ Irrigation system specifications and details for assembly and installation

- □ The parameters used for programming the weather-based irrigation system controller schedule for the established landscape including: soil type, slope, plant type, and type of irrigation nozzle/emitter used for each circuit

- □ Recycled water, rainwater and/or graywater system drawings and specifications, if installed

□ **Any written specifications prepared for a project that are applicable to the landscape improvements shall be submitted for review.**

□ **The Monthly Irrigation Schedule Worksheet shall be used to prepare an irrigation schedule which covers the initial one-year plant establishment period and following one-year period.**

2) 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.

The Landscape Irrigation Audit Report shall include the following statement:

"The landscape and irrigation system has been installed as specified in the approved Landscape Project Application and complies with the provisions of this Ordinance."

The Landscape Audit Report shall be signed by a certified landscape irrigation auditor.

The Landscape Irrigation Audit and Report shall verify that:

- □ The landscaping and irrigation system was installed as designed and specified in the approved Landscape Project Application.

- □ The installed irrigation system is in a leak-free condition.

- □ The irrigation system does not cause water waste due to runoff, low head drainage, overspray or other similar condition where water flows onto adjacent property, non-irrigated areas structures, walkways, roadways or other paved areas.

- □ The Monthly Irrigation Schedule provides for no more than the needed plant water requirements.

- □ The person responsible for long-term landscape maintenance and irrigation management at the property has received the Monthly Irrigation Schedule.

INFORMATION FOR COMPLETING
the
OUTDOOR WATER USE EFFICIENCY CHECKLIST
TIER II SINGLE-FAMILY & MULTI-FAMILY RESIDENTIAL, COMMERCIAL, INDUSTRIAL & PUBLIC DEVELOPMENT

This guide contains information to help assist the applicant in completing the Outdoor Water Use Efficiency Checklist for Tier II Single-Family & Multi-Family Residential, Commercial, Institutional & Public Development.

Terms:

Total Landscape Area – all the planting areas, turf areas, and water features in a landscape. 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). Landscape area is measured in square feet, and is used to calculate a water budget, or the amount of water needed by the landscape per year.

Turf Area – the area of the landscape, in square feet, that is devoted to turf (i.e., lawn).

High, Moderate, Low, and Very Low Water Use Plants – the amount of water needed by a plant is species-specific. Plants are classified as high, moderate, low or very low water use.

To determine plant water needs, the following reference documents may be used:

- The Water Use Classification of Landscape Species (WUCOLS IV), 2014. It is available on-line at: http://ucanr.edu/sites/WUCOLS/
- The Water Smart Gardening in Santa Cruz County on-line guide, (http://www.santacruz.watersavingplants.com)

If you cannot find the information you need, please contact District staff for assistance.

Water Feature Surface Area – the surface area of the landscape, in square feet, that is devoted to ponds, lakes, waterfalls, fountains, artificial streams, spas and swimming pools.

- **You will need to know the area of the landscape that is composed of moderate to high water use plants, turf and water features. The combined area of these landscape components may not exceed 25% of the total landscape area.**

Hydrozone – a part of the landscape having plants with similar water needs. Low, moderate and high water use hydrozones need to be irrigated separately to maximize water use efficiency.

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Low-volume Irrigation – 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 is designed to apply small volumes of water slowly at or near the root zone of plants.

Automatic Self-adjusting Irrigation Controllers – an automatic timing device used to remotely control valves that operate an irrigation system using weather-based (evapotranspiration) and/or sensor-based (soil moisture) data. For Tier I landscapes, the use of automatic self-adjusting irrigation controllers is recommended. If a traditional controller (i.e., non-self-adjusting) is installed, it must have multiple programming capabilities and an automatic rain shut-off device.

Moisture Sensor/Rain Sensor Shut-offs – devices that sense when irrigation is not necessary because precipitation is occurring. If an automatic irrigation controller is installed, an automatic rain shut-off device is required.

Check Valves – a valve located under a sprinkler head, or other location in the irrigation system, to hold water in the system and prevent drainage from sprinkler heads when the sprinkler is off. Check valves are required at the lowest elevation point(s) on each irrigation valve run or lateral.

Swing Joints – an irrigation component that provides a flexible, leak-free connection between the emission device (i.e., sprinkler head) and lateral pipeline to allow movement in any direction and to prevent equipment damage.

OUTDOOR WATER USE EFFICIENCY CHECKLIST

TIER II SINGLE-FAMILY, MULTI-FAMILY, COMMERCIAL, INDUSTRIAL, PUBLIC DEVELOPMENT

To Be Completed by a Certified Professional

I certify that the subject project meets the requirements of the Soquel Creek Water Conservation in Landscaping Ordinance.

_____ _____ _____

Signature Title Date

Project Information

Project Type: ☐ Tier II Single-Family ☐ Multi-Family ☐ Commercial ☐ Industrial ☐ Public ☐ Other

Applicant Name (print):	Contact Phone #:
Project Site Address:	Email address:
Assessor's Parcel Number:	# of Units: of Meters:

For a new Tier II single-family (one or two-unit) residential project, enter this information. For all other projects, input an aggregate value for the entire project.	Parcel Area (sq. ft.): ☐ *Tier II (≥ 10,000 sq. ft. parcel)*
	Total Landscape Area (sq. ft.):
	Turf Area (sq.ft.):
	High Water Use Plant Area (sq. ft.):
	Water Feature Surface Area (sq.ft.):

Landscape Parameter	Requirements	Project Meets Requirements
General Limits	Combined area of turf, moderate to high water use plants and water features is less than 25% of the total landscape area	☐ Yes ☐ No
Turf Limits	No turf in areas less than 10 feet wide in any direction	☐ Yes ☐ No
	All turf is planted on slopes less than 12%	☐ Yes ☐ No
	No turf in street medians, traffic islands, planter strips, and parking lot islands	☐ Yes ☐ No
	Turf is a water-conserving species (moderate water use as defined by WUCOLS). Contact District Staff if WUCOLS factor is not available.	☐ Yes ☐ No
Plants	Plants are grouped by hydrozones	☐ Yes ☐ No
	Hydrozones are irrigated separately	☐ Yes ☐ No
	Only very low to low water use plants on slopes greater than 33%	☐ Yes ☐ No
	Plants are selected and planted appropriately based on their adaptability to the area and water use and at least one listed method for planting hydrozones was utilized	☐ Yes ☐ No
	Invasive plants are not used (recommended)	☐ Yes ☐ No
Irrigation System Design	The use of rainwater and/or graywater for irrigation was evaluated	☐ Yes ☐ No
	Irrigation system designed, maintained and managed to meet or exceed 75% efficiency for overhead spray and 81% for drip systems	☐ Yes ☐ No
	A pressure regulator is used if the water pressure (at meter) is greater than 80 psi	☐ Yes ☐ No
	Manual shut-off valve present	☐ Yes ☐ No
	Master shut-off valve present	☐ Yes ☐ No
	High flow sensor present	☐ Yes ☐ No
	Low-volume irrigation used for all non-turf areas	☐ Yes ☐ No
	No overhead sprinkler systems within 24 inches of non-permeable surfaces	☐ Yes ☐ No

OUTDOOR WATER USE EFFICIENCY CHECKLIST

TIER II SINGLE-FAMILY, MULTI-FAMILY, COMMERCIAL, INDUSTRIAL, PUBLIC DEVELOPMENT

Project Information, Continued

Landscape Parameter	Requirements	Project Meets Requirements
Irrigation System Design, Continued	Sprinkler heads and emission devices have matched precipitation rates	☐ Yes ☐ No
	Overhead spray nozzle precipitation is less than 0.75 inches per hour	☐ Yes ☐ No
	Automatic, self-adjusting irrigation controllers installed (i.e., weather or sensor-based)	☐ Yes ☐ No
	Moisture sensor/rain sensor shutoffs installed	☐ Yes ☐ No
	Drip emitters or bubblers installed at each tree, maximum 1.5 gallons per minute, on separate valves	☐ Yes ☐ No
	Check valves installed at lowest point(s) on each valve run	☐ Yes ☐ No
	Swing joints installed	☐ Yes ☐ No
	Backflow prevention device installed when dedicated landscape meters are required	☐ Yes ☐ No
Irrigation System Efficiency	No overspray or runoff	☐ Yes ☐ No
Irrigation Schedule	Irrigation schedule regulated by automatic irrigation controllers	☐ Yes ☐ No
	Overhead turf irrigation to occur between 8 PM and 10 AM	☐ Yes ☐ No
	Irrigation will be avoided during windy or freezing weather and is prohibited within 48 hours of rainy weather	☐ Yes ☐ No
	Irrigation schedule to be reduced (frequency & duration) after plants are established (1 year)	☐ Yes ☐ No
	Irrigation schedule to be adjusted seasonally based on plant needs	☐ Yes ☐ No
	Irrigation schedule provided to appropriate personnel and posted near irrigation controller	☐ Yes ☐ No
Landscape/Irrigation Maintenance	Irrigation system to be inspected regularly and maintained in good working condition	☐ Yes ☐ No
	Repairs to be made using identical or improved parts	☐ Yes ☐ No
	Landscape maintenance schedule to be followed	☐ Yes ☐ No
Soil Management	Soil conditioned with 6 cubic yards organic amendment/1,000 sq. ft. topsoil	☐ Yes ☐ No
	Compacted soils are transformed to friable conditions (recommended)	☐ Yes ☐ No
	At least 3-inches of mulch on exposed soil surfaces	☐ Yes ☐ No
Metering	Dedicated irrigation meter (not required for Tier II SF)	☐ Yes ☐ No
	Private irrigation submeter (recommended for Tier II SF)	☐ Yes ☐ No
Water Features	Water features are recirculating	☐ Yes ☐ No
	No automatic fill valves	☐ Yes ☐ No
	Covers for pools and spas	☐ Yes ☐ No
Stormwater Management Documentation	Hardscape areas are constructed of pervious materials (recommended)	☐ Yes ☐ No
	Checklist complete	☐ Yes ☐ No
	Water Allowance Calculation Worksheet complete	☐ Yes ☐ No
	Landscape & Irrigation System Design Plans complete	☐ Yes ☐ No

OUTDOOR WATER USE EFFICIENCY CHECKLIST

TIER II SINGLE-FAMILY, MULTI-FAMILY, COMMERCIAL, INDUSTRIAL, PUBLIC DEVELOPMENT

Reviewer Name: **Date Received:** **Date Approved:**	**Recommendations and Comments:**

Water Allowance Calculation Worksheet

This worksheet is to be filled out by the project applicant and it is a required element of the Landscape Project Application

Please complete all Sections (I, II(a) and II(b)) of the worksheet.

SECTION I. HYDROZONE INFORMATION TABLE

Please complete the hydrozone table(s) for each hydrozone. Use as many tables as necessary to provide the square footage of landscape area per hydrozone.

Hydrozone*	Zone or Valve	Irrigation Method**	Area (Sq. Ft.)	% of Landscape Area
	Total			**100%**

**** Hydrozone***
HW = High Water Use Plants
MW = Moderate Water Use Plants
LW = Low Water Use Plants
VLW = Very Low Water Use Plants

*****Irrigation Method***
MS = Micro-spray
S = Spray
R = Rotor
B= Bubbler
D= Drip
O = Other

SECTION II. WATER BUDGET CALCULATIONS

Water budget calculations shall adhere to the following requirements:

(1) The plant factor used shall be from WUCOLS. The plant factor ranges from 0 to 0.1 for very low water use plants, 0.1 to 0.3 for low water use plants, from 0.4 to 0.6 for moderate water use plants, and from 0.7 to 1.0 for high water use plants.

(2) All water features shall be included in the high water use hydrozone and temporarily irrigated areas shall be included in the low water use hydrozone.

Section II(a). Maximum Applied Water Allowance (MAWA)

The project's Maximum Applied Water Allowance shall be calculated using this equation:

MAWA = (ETo) (Conversion Factor) [(ETAF x Landscaped Area)]

MAWA = (36.6) (0.62) [(0.5 x LA)]

where:

MAWA = Maximum Applied Water Allowance (gallons per year)
ETo = Reference Evapotranspiration (ETo) for Santa Cruz (36.6 inches per year)
0.62 = Conversion Factor (to gallons per square foot)
0.5 = ET Adjustment Factor (ETAF)
LA = Landscaped Area (square feet)

Show calculation below.

MAWA = (36.6) x (0.62) x [(0.5 x _____)]
(Landscape Area in sq. ft.)

MAWA = (22.69) X [(0.5 x _____)]
(Landscape Area in sq. ft.)

Maximum Applied Water Allowance = _____ **gallons per year**

Section II(b). Estimated Total Water Use (ETWU)

The project's Estimated Total Water Use shall be calculated using the following formula:

ETWU = (ETo) (0.62) [(PF x HA)/IE)]

ETWU = Estimated Total Water Use (Spray) + Estimated Total Water Use (Drip)
ETWU = (36.6) (0.62) [(PF x HA)/0.75)] + (36.6) (0.62) [(PF x HA)/0.81)]

where:

ETWU = Estimated Total Water Use (gallons per year)
ETo = Reference Evapotranspiration (ETo) for Santa Cruz (36.6 inches per year)
0.62 = Conversion Factor (to gallons per square foot)
PF = Plant Factor from WUCOLS (see Definitions)
HA = Hydrozone Area [high, medium, low, very low water use areas] (square feet)
IE = Irrigation Efficiency (0.75 for spray irrigation, 0.81 for drip irrigation)

Hydrozone Table for Calculating ETWU
Please complete the hydrozone table(s). Use as many tables as necessary.

Hydrozone	Plant Water Use Type(s)	Plant Factor (PF)	Area (HA) (square feet)	PF x HA (square feet)	(PF x HA)/0.75	(PF x HA)/0.81
			Sum for each irrigation method			
			Sum total (spray + drip)			

Estimated Total Water Use = _____gallons

Show calculations.

SOQUEL CREEK WATER DISTRICT

Monthly Irrigation Schedule

1) Project Name: _____

2) Project Address: _____

_____

3) Assessor's Parcel Number: _____

4) Prepared By: _____

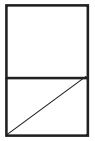
5) Address: _____

6) Phone No.: _____ **7) License No.:** _____

8) Date Prepared: _____

Valve or Station Number (A)	Plant Type (B)	Irrigation Type (C)	Flow Rate (D)	Precipitation Rate (E)	Initial Plant Establishment Period (4 Months)				Following One-Year Period (12 Months)											
1																				
2																				
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				

Note: This irrigation schedule should be used as a guide. The landscaping should be monitored regularly and the schedule adjusted as needed for plant growth, local rainfall, and climatic conditions. Check the irrigation system frequently to minimize runoff and overspray. Schedule valves with sprinklers to irrigate between 8 pm and 10 am to reduce water loss from wind and evaporation.



Month

Run Time - Minutes per day/Days per week