



COMMUNITY DEVELOPMENT DEPARTMENT
PLANNING DIVISION
LANDSCAPE AND IRRIGATION
DESIGN GUIDE 2015

1000 Spring Street
Paso Robles, CA. 93446
Phone: (805) 237-3970
Fax: (805) 237-3904
planning@prcity.com

Chapter 21.22B of the Zoning Code requires the following:

- The Landscape Documentation Package be submitted in conjunction with or prior to the submittal of construction drawings for building plan check.
- A Certificate of Completion need to be issued by the City prior to issuance of a Certificate of Occupancy of the associated project/building.

LANDSCAPE DOCUMENT PACKAGE

The Landscape Documentation Package shall include the following elements 1 through 4, and elements 5 and 6 if required for the project. Elements 5 and 6 shall be provided for projects with landscape area equal to 0.5 acre or greater, or proposing turf in a residential front or street side yards.

- 1. COMPLETED APPLICATION FORM:** Fill out Standard Development Application Form from Community Development Department. (Attachment 1)
- 2. WATER EFFICIENT LANDSCAPE WORK SHEET:**
A project applicant shall complete the Water Efficient Landscape Worksheet (Attachment 3) which contains the following:
 - A. Hydrozone information for the landscape project and water budget calculations (Attachment 3) for the landscape project.
 - B. Water budget calculations shall adhere to the following requirements:
 1. For the calculation of the Maximum Applied Water Allowance and Estimated Total Water Use, a project applicant shall use the ETo values from the Reference Evapotranspiration Table (Attachment 2).
 2. The plant factors used shall be from WUCOLS. Plant factors from horticultural researchers with academic institutions or professional associations as approved by the California Department of Water Resources (DWR) may be used if documentation and references are provided as an attachment to calculations. The plant factor ranges from 0 to 0.1 for very low water use plants, from 0.2 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.
 3. All water features shall be included in the high water use hydrozone. Temporarily irrigated areas shall be included in the low water use hydrozone.
 4. All Special Landscape Areas shall be identified and their water use calculated as described in Attachment 3.
 5. ETAF shall be 0.55 or below for residential areas.
 6. ETAF shall be 0.45 or below for non-residential areas.
 7. ETAF for Special Landscape Areas shall not exceed 1.0.
 8. ETWU must be below the MAWA.
 9. Irrigation efficiency shall comply with the Landscape and Irrigation System Ordinance.

3. **LANDSCAPE DESIGN PLAN:**

For the efficient use of water, a landscape shall be carefully designed and planned for the intended function of the project. Landscapes shall comply with the City's Landscape and Irrigation Ordinance. A landscape design plan meeting the following design criteria shall be submitted as part of the Landscape Documentation Package.

1. Plant Material

- a. Any plant may be selected for the landscape, provided the Estimated Total Water Use in the landscape area does not exceed the Maximum Applied Water Allowance. Methods to achieve water efficiency shall include one or more of the following:
 1. protection and preservation of native species and natural vegetation;
 2. selection of water-conserving plant, tree, and turf species, especially local native plants;
 3. selection of plants based local climate suitability, and disease and pest resistance;
 4. selection of trees based on applicable local tree ordinances or tree shading guidelines, and size at maturity as appropriate for the planting area;
 5. selection of plants from local and regional landscape program plant lists; and
 6. selection of plants from local Fuel Modification Plan Guidelines.
- b. Each hydrozone shall have plant materials with similar water use, with the exception of hydrozones with plants of mixed water use.
- c. Plants shall be selected and planted appropriately based upon their adaptability to the climatic, geologic, and topographical conditions of the project site. Methods to achieve water efficiency shall include one or more of the following:
 1. Use the Sunset Western Climate Zone System which takes into account temperature, humidity, elevation, terrain, latitude, and varying degrees of continental and marine influence on local climate;
 2. Recognize the horticultural attributes of plants (i.e., mature plant size, invasive surface roots) to minimize damage to property or infrastructure (e.g., buildings, sidewalks, power lines); allow for adequate soil volume for healthy root growth; and
 3. Consider the solar orientation for plant placement to maximize summer shade and winter solar gain.
- d. Turf is not allowed on slopes greater than 20% where the toe of the slope is adjacent to an impermeable hardscape and where 20% means 1 foot of vertical elevation change for every 5 feet of horizontal length ($\text{rise divided by run} \times 100 = \text{slope percent}$).
- e. Turf and high water use plants, characterized by a plant factor of 0.7 to 1.0, are prohibited in public right-of-ways, including street medians and parkways.
- f. A landscape design plan for projects in fire-prone areas shall address fire safety and prevention. A defensible space or zone around a building or structure is required per Public Resources Code Section 4291(a) and (b). Avoid fire-prone plant materials and highly flammable mulches. Refer to local Fuel Modification Plan guidelines.
- g. The use of invasive plant species such as those listed by the California Invasive Plant Council, is strongly discouraged.
- h. The architectural guidelines of a common interest development, which include

community

apartment projects, condominiums, planned developments, and stock cooperatives, shall not prohibit or include conditions that have the effect of prohibiting the use of low-water use plants as a group.

2. Water Features
 - a. Recirculating water systems shall be used for water features.
 - b. Where available, recycled water shall be used as a source for decorative water features.
 - c. Surface area of a water feature shall be included in the high water use hydrozone area of the water budget calculation.
 - d. Pool and spa covers are highly recommended.
3. Soil Preparation, Mulch and Amendments
 - a. 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.
 - b. Soil amendments shall be incorporated according to recommendations of the soil report and what is appropriate for the plants selected.
 - c. 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 6 inches of soil are exempt from adding compost and tilling.
 - d. A minimum two inch (3") 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 where mulch is contraindicated. To provide habitat for beneficial insects and other wildlife, up to 5 % of the landscape area may be left without mulch. Designated insect habitat must be included in the landscape design plan as such.
 - e. Stabilizing mulching products that meet current engineering standards shall be used on slopes.
 - f. The mulching portion of the seed/mulch slurry in hydro-seeded applications shall meet the mulching requirement.
 - g. Organic mulch materials made from recycled or post-consumer shall take precedence over inorganic materials or virgin forest products unless the recycled post-consumer organic products are not locally available. Organic mulches are not required where prohibited by local Fuel Modification Plan Guidelines or other applicable local ordinances.
 - h. All planted landscape areas are required to have friable soil to maximize water retention and infiltration.
 - i. It is strongly recommended that landscape areas be designed for capture and infiltration capacity that is sufficient to prevent runoff from impervious surfaces (i.e. roof and paved areas) from either: the one inch, 24-hour rain event or (2) the 85th percentile, 24-hour rain event, and/or additional capacity as required by any applicable local, regional, state or federal regulation.
4. The landscape design plan, at a minimum, shall:
 - a. delineate and label each hydrozone by number, letter, or other method;
 - b. identify each hydrozone as low, moderate, high water or mixed water use. Temporarily irrigated areas of the landscape shall be included in the low water use hydrozone for the water budget calculation.;
 - c. identify recreational areas;
 - d. identify areas permanently and solely dedicated to edible plants;

- e. identify areas irrigated with recycled water;
- f. identify type of mulch and application depth;
- g. identify soil amendments, type, and quantity;
- h. identify type and surface area of water features;
- i. identify hardscapes (pervious and non-pervious);
- j. identify location, installation details, and 24-hour retention or infiltration capacity of any applicable stormwater best management practices that encourage on-site retention and infiltration of stormwater. Project applicants shall refer to the local agency or regional Water Quality Control Board for information on any applicable stormwater technical requirements. Stormwater best management practices are encouraged in the landscape design plan and examples include, but are not limited to:
 - 1. Minimize the area of impervious surfaces such as paved areas, roof and concrete driveways.
 - 2. Incorporate pervious or porous surfaces (e.g., gravel, permeable pavers or blocks, pervious or porous concrete) that minimize runoff.
 - 3. Direct runoff from paved surfaces and roof areas into planting beds or landscaped areas to maximize site water capture and reuse.
 - 4. Incorporate rain gardens, cisterns, and other rain harvesting or catchment systems.
 - 5. Incorporate infiltration beds, swales, basins and drywells to capture storm water and dry weather runoff and increase percolation into the soil.
 - 6. Consider constructed wetlands and ponds that retain water, equalize excess flow, and filter pollutants.
- k. identify any applicable rain harvesting or catchment technologies and their 24-hour retention or infiltration capacity;
- l. identify any applicable graywater discharge piping, system components, and areas of distribution;
- m. contain the following statement: "I have complied with the criteria of the ordinance and applied them for the efficient use of water in the landscape design plan;" and
- n. bear the signature of a licensed landscape architect, licensed landscape contractor or any other person authorized to design a landscape. (See Sections 5500.1, 5615, 5641, 5641.1, 5641.2, 5641.3, 5641.4, 5641.5, 5641.6, 6701, 7027.5 of the Business and Professions Code, Section 832.27 of Title 16 of the California Code of Regulations, and Section 6721 of the Food and Agriculture Code.)

4. IRRIGATION DESIGN PLAN:

This section applies to landscaped areas requiring permanent irrigation, not areas that require temporary irrigation solely for the plant establishment period. For the efficient use of water, an irrigation system shall meet all the requirements described in the Landscape and Irrigation Ordinance, requirements listed in this section, and the manufacturers' recommendations. The irrigation system and its related components shall be planned and designed to allow for proper installation, management, and maintenance. An irrigation design plan meeting the following design criteria shall be submitted as part of the Landscape Documentation Package.

1. Irrigation System

- A. Dedicated landscape water meters are required for non-residential landscapes larger than 1,000 square-feet and are highly recommended on all non-residential landscape areas to facilitate water management. For non-residential projects where total water demand

(domestic and irrigation) can be served by a 1-inch meter or smaller, use of a sub-meter may be considered according to Public Works policy and applicable standards.

- B. Automatic irrigation controllers utilizing either evapotranspiration or soil moisture sensor data shall be required for irrigation scheduling in all systems serving landscape areas 0.5 acres or larger.
- C. If the water pressure is below or exceeds the recommended pressure of the specified irrigation devices, the installation of a pressure regulating device is required to ensure that the dynamic pressure at each emission device is within the manufacturer's recommended pressure range for optimal performance.
 - 1. 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.
 - 2. Static water pressure, dynamic or operating pressure and flow reading 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. Sensors (rain, freeze, wind, etc.), either integral or auxiliary, that suspend or alter irrigation operation during unfavorable weather conditions shall be required on all irrigation systems, as appropriate for local climatic conditions. Irrigation should be avoided during windy or freezing weather or during rain.
- E. Manual shut-off valves (such as a gate valve, ball valve, or butterfly valve) 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 (such as a main line break) or routine repair.
- F. Backflow prevention devices shall be required to protect the water supply from contamination by the irrigation system. A project applicant shall refer to the applicable local agency code (i.e., public health) for additional backflow prevention requirements.
- G. Flow sensors that detect high flow conditions created by system damage or malfunction are required for all non-residential landscape areas larger than 1,000 square-feet. 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.
- H. The irrigation system shall be designed to prevent runoff, low head drainage, overspray, or other similar conditions where irrigation water flows onto non-targeted areas, such as adjacent property, non-irrigated areas, hardscapes, roadways or structures.
- I. Relevant information from the soil management plan, such as soil type and infiltration rate, shall be utilized when designing irrigation systems.
- J. The design of the irrigation system shall conform to the hydrozones of the landscape design plan.
- K. The irrigation system must be designed and installed to meet, at a minimum, the irrigation efficiency criteria as described in Section 492.4 regarding the Maximum Applied Water Allowance.

- L. All irrigation emission devices 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.
- M. It is highly recommended that the project applicant or local agency inquire with the local water purveyor about peak water operating demands (on the water supply system) or water restrictions that may impact the effectiveness of the irrigation system.
- N. In mulched planting areas, the use of low volume irrigation is required to maximize water infiltration into the root zone.
- O. Sprinkler heads and other emission devices shall have matched precipitation rates, unless otherwise directed by the manufacturer's recommendations.
- P. Head to head coverage is recommended. However, sprinkler spacing shall be designed to achieve the highest possible distribution uniformity using the manufacturer's recommendations.
- Q. Swing joints or other riser-protection components are required on all risers subject to damage that are adjacent to hardscapes or in high traffic areas or turf grass.
- R. Check valves or anti-drain valves are required for all sprinklers where low point drainage could occur.
- S. Narrow or irregularly shaped areas, including turf, less than ten (10) feet in width in any direction shall be irrigated with subsurface irrigation other means that produce no runoff or overspray.
- T. Overhead irrigation shall not be permitted within 24 inches of any non-permeable surface. Allowable irrigation within the setback from non-permeable surfaces may include drip, drip line, or other low flow non-spray technology. The setback area may be planted or unplanted. The surfacing of the setback may be mulch, gravel, or other porous material. These restrictions may be modified if:
 - 1. the landscape area is adjacent to permeable surfacing and no runoff occurs; or
 - 2. the adjacent non-permeable surfaces are designed and constructed to drain entirely to landscaping; or
 - 3. the irrigation designer specifies an alternative design or technology, as part of the Landscape Documentation Package and clearly demonstrates strict adherence to irrigation system design criteria in Section IV.F (1) (H). Prevention of overspray and runoff must be confirmed during the irrigation audit.
- U. Slopes greater than 25% shall not be irrigated with an irrigation system with an application rate exceeding 0.75 inches per hour. This restriction may be modified if the landscape designer specifies an alternative design or technology, as part of the Landscape Documentation Package, and clearly demonstrates no runoff or erosion will occur. Prevention of runoff and erosion must be confirmed during the irrigation audit.

2. Hydrozone

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- A. Each valve shall irrigate a hydrozone with similar site, slope, sun exposure, soil conditions and plant materials with similar water use.
 - B. Sprinkler heads and other emission devices shall be selected based on what is appropriate for the plant type within that hydrozone.
 - C. Where feasible, trees shall be placed on separate valves from shrubs, groundcovers and turf to facilitate the appropriate irrigation of trees. The mature size and extent of the root zone shall be considered when designing irrigation for the tree.
 - D. Individual hydrozones that mix plants of moderate and low water use or moderate and high water use, may be allowed if:
 1. plant factor calculation is based on the proportions of the respective plant water uses and their plant factor; or
 2. the plant factor of the higher water using plant is used for calculations.
 - E. Individual hydrozones that mix high and low water use plants shall not be permitted.
 - F. On the landscape design plan and irrigation design plan, hydrozone areas shall be designated by number, letter or other designation. On the irrigation design plan, designate the areas irrigated by each valve, and assign a number to each valve. Use this valve number in the Hydrozone Information Table (see Attachment 3, Section A). This table can also assist with the irrigation audit and programming the controller.
3. The irrigation design plan, at a minimum shall contain:
- A. location and size of separate water meters for landscape;
 - B. location, type and size of all components of the irrigation system, including controllers, main and lateral lines, valves, sprinkler heads, moisture sensing devices, rain switches, quick couplers, pressure regulators and backflow prevention devices;
 - C. static water pressure at the point of connection to the public water supply;
 - D. flow rate (gallons per minute), application rate (inches per hour) and design operating pressure (pressure per square inch) for each station;
 - E. recycled water irrigation systems (if applicable);
 - F. the following statement: "I have complied with the criteria of the ordinance and applied them accordingly for the efficient use of water in the irrigation design plan," and
 - G. the signature of a licensed landscape architect, certified irrigation designer, licensed landscape contractor or other person authorized to design an irrigation system. (See Sections 5500.1, 5615, 5641, 5641.1, 5641.2, 5641.3, 5641.4, 5641.5, 5641.6, 6701, 7027.5 of the Business and Professions Code, Section 832.27 of Title 16 of the California Code of Regulations, and Section 6721 of the Food and Agriculture Code.)

5. SOIL MANAGEMENT REPORT:

In order to reduce runoff and encourage healthy plant growth, a soil management report shall be completed by the project applicant, or his/her designee, as follows:

1. Submit soil samples to a laboratory for analysis and recommendations.
 - a. Soil sampling shall be conducted in accordance with laboratory protocol, including protocols regarding adequate sampling depth for the intended plants.
 - b. The soil analysis shall include:
 1. soil texture;
 2. infiltration rate determined by laboratory test or soil texture infiltration rate table;
 3. pH;
 4. total soluble salts;
 5. sodium;
 6. percent organic matter; and
 7. recommendations for soil modifications, amendments and planting.
 - c. In projects with multiple landscape installations (i.e. production home developments) a soil sampling rate of 1 in 7 lots or approximately 15% will satisfy this requirement. Large landscape projects shall sample at a rate equivalent to 1 in 7 lots.
2. The project applicant, or his/her designee, shall comply with one of the following:
 - a. If significant mass grading is not planned, the soil analysis report shall be submitted to the local agency as part of the Landscape Documentation Package; or
 - b. If significant mass grading is planned, the soil analysis report shall be submitted to the local agency as part of the Certificate of Completion.
3. The soil analysis report shall be made available, in a timely manner, to the professionals preparing the landscape design plans and irrigation design plans to make any necessary adjustments to the design plans.
4. The project applicant, or his/her designee, shall submit documentation verifying implementation of soil analysis report recommendations to the local agency with Certificate of Completion.

6. GRADING DESIGN PLAN:

For the efficient use of water, grading of a project site shall be designed to minimize soil erosion, runoff and water waste. A grading plan shall be submitted as part of the Landscape Documentation Package. A comprehensive grading plan prepared by a civil engineer for other local agency permits satisfies this requirement.

1. The project applicant shall submit a landscape grading plan that indicates finished configurations and elevations of the landscape area including:
 - A. Height of graded slopes;
 - B. Drainage patterns;
 - C. Pad elevations;
 - D. Finish grade;
 - E. Stormwater retention improvements, if applicable.
2. To prevent excessive erosion and runoff, it is highly recommended that project applicants:
 - A. Grade so that all irrigation and normal rainfall remains within property lines and does not drain on to non-permeable hardscapes;
 - B. Avoid disruption of natural drainage patterns and undisturbed soil; and
 - C. Avoid soil compaction in landscape areas.

3. The grading design plan shall contain the following statement: “I have complied with the criteria of the ordinance and applied them accordingly for the efficient use of water in the grading design plan” and shall bear the signature of a licensed professional as authorized by law.

CERTIFICATE OF COMPLETION

1. The project applicant shall:
1. Submit the signed Certificate of Completion to the City for review;
 2. Ensure that copies of the approved Certificate of Completion are submitted to the property owner or his or her designee.

The City will:

1. Receive the signed Certificate of Completion from the project applicant;
2. Approve or deny the Certificate of Completion. If the Certificate of Completion is denied, the local agency shall provide information to the project applicant regarding reapplication, appeal or other assistance.

The Certificate of Completion (see Attachment 4 for certificate form) shall include the following:

1. Project information sheet that contains:
 - Standard Development Application Form from the Community Development Department;
2. Certification by either the signer of the landscape design plan, the signer of the irrigation design plan, or the licensed landscape contractor that the landscape project has been installed per the approved Landscape Documentation Package;
 - Where there have been changes made in the field during construction, these “as-built” or record drawings shall be included with the certification;
 - A diagram of irrigation plans showing hydrozones shall be kept with irrigation controller;
3. Irrigation scheduling parameters used to set the controller;
4. Landscape and irrigation maintenance schedule;
5. Irrigation audit report; and
6. Soil analysis report, if required with Landscape Documentation Package, and documentation verifying implementation of soil report recommendations.

2. **IRRIGATION SCHEDULING:**

For the efficient use of water, all irrigation schedules shall be developed, managed, and evaluated to utilize the minimum amount of water required to maintain plant health. Irrigation schedules shall meet the following criteria:

1. Irrigation scheduling shall be regulated by automatic irrigation controllers where required.
2. Overhead irrigation shall be scheduled between 7:00 p.m. and 9:00 a.m. unless weather conditions prevent it. Operation of the irrigation system outside the normal watering window is allowed for auditing and system maintenance, only when audit and maintenance staff are present.
3. For implementation of the irrigation schedule, particular attention must be paid to irrigation run times, emission device, flow rate, and current reference evapotranspiration, so that applied water meets the Estimated Total Water Use. Total annual applied water shall be less than or equal to Maximum Applied Water Allowance (MAWA). Actual irrigation schedules shall be regulated by automatic irrigation controllers using current reference evapotranspiration data (e.g., CIMIS) or soil moisture sensor data.
4. Parameters used to set the automatic controller shall be developed and submitted for each of the following:

- The plant establishment period;
 - The established landscape; and
 - Temporarily irrigated areas.
5. Each irrigation schedule shall consider for each station all of the following that apply:
- Irrigation interval (days between irrigation);
 - Irrigation run times (hours or minutes per irrigation event to avoid runoff);
 - Number of cycle starts required for each irrigation event to avoid runoff;
 - Amount of applied water scheduled to be applied on a monthly basis;
 - Application rate setting;
 - Root depth setting;
 - Plant type setting;
 - Soil type;
 - Slope factor setting;
 - Shade factor setting; and
 - Irrigation uniformity or efficiency setting.

3. LANDSCAPE AND IRRIGATION MAINTENANCE SCHEDULE:

1. Landscapes shall be maintained to ensure water use efficiency. A regular maintenance schedule shall be submitted with the Certificate of Completion.
2. A regular maintenance schedule shall include, but not be limited to, routine inspection; auditing; adjustment and repair of the irrigation system and its components; aerating and dethatching turf areas; topdressing with compost; replenishing mulch; fertilizing; pruning; weeding in all landscape areas and removing obstructions to emission devices. Operation of the irrigation system outside the normal watering window is allowed for auditing and system maintenance.
3. Repair of all irrigation equipment shall be done with the originally installed components or their equivalents or components with better efficiency.
4. A project applicant is encouraged to implement established landscape industry sustainable Best Practices for all landscape maintenance activities.

4. IRRIGATION AUDIT, IRRIGATION SURVEY AND IRRIGATION WATER USE ANALYSIS:

1. All landscape irrigation audits shall be conducted by a certified landscape irrigation auditor and shall not be conducted by the person who designed or installed the landscape. In large projects with multiple landscape installations (i.e. production home developments) an auditing rate of 1 in 7 lots or approximately 15% will satisfy this requirement.
2. For new construction and rehabilitated landscape projects installed after December 1, 2015: the project applicant shall submit an irrigation audit report with the Certificate of Completion to the local agency that may include, but is not limited to, inspection, system tune-up, system test with distribution uniformity, reporting overspray or run off that causes overland flow, and preparation of an irrigation schedule, including configuring irrigation controllers with application rate, soil types, plant factors, slope, exposure and any other factors necessary for accurate programming.

5. IRRIGATION EFFICIENCY:

For the purpose of determining Estimated Total Water Use, average irrigation efficiency is assumed to be 0.75 for overhead spray devices and 0.81 for drip system devices.

6. STORMWATER MANAGEMENT AND RAINWATER RETENTION:

1. Stormwater management practices minimize runoff and increase infiltration, increasing

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groundwater recharge and improving water quality. Implementing stormwater best management practices into the landscape and grading design plans to minimize runoff and to increase on-site rainwater retention and infiltration are encouraged.

2. Project applicants shall refer to the Municipal Code for information on applicable stormwater ordinances and stormwater management plans.

ATTACHMENT 1

Standard Development Application form

ATTACHMENT 2

REFERENCE EVAPOTRANSPIRATION (ET_o) TABLE

From CIMAS Reference Evapotranspiration Zone Map, Department of Water Resources, 1999 (All values in inches)													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual ET _o
Paso Robles	1.6	2.0	3.2	4.3	5.5	6.3	7.3	6.7	5.1	3.7	2.1	1.4	49.0

ATTACHMENT 3

WATER EFFICIENT LANDSCAPE WORKSHEET

Water Efficient Landscape Calculations are required for all Landscape Documentation Package submittals. Calculations shall be prepared using the applicable residential or non-residential excel workbooks available at the following URL:
<http://www.water.ca.gov/wateruseefficiency/landscapeordinance/>

The following is provided as an example only.

Reference Evapotranspiration

Hydrozone # /Planting Description ^a	Plant Factor (PF)	Irrigation Method ^b	Irrigation Efficiency (IE) ^c	ETAF (PF/IE)	Landscape Area (sq, ft,)	ETAF x Area	Estimated Total Water Use (ETWU) ^e
Regular Landscape Areas							
				Totals	(A)	(B)	
Special Landscape Areas							
				1			
				1			
				1			
				Totals	(C)	(D)	
						ETWU Total	
						Maximum Allowed Water Allowance (MAWA)^e	

^a**Hydrozone #/Planting Description**
 E.g
 1.) front lawn
 2.) low water use plantings
 3.) medium water use planting

^b**Irrigation Method**
 overhead spray
 or drip

^c**Irrigation Efficiency**
 0.75 for spray head
 0.81 for drip

^d**ETWU (Annual Gallons Required) =**
 $Eto \times 0.62 \times ETAF \times Area$
 where 0.62 is a conversion factor that converts acre-inches per acre per year to gallons per square foot per year.

^e**MAWA (Annual Gallons Allowed) =** $(Eto) (0.62) [(ETAF \times LA) + ((1-ETAF) \times SLA)]$
 where 0.62 is a conversion factor that converts acre- inches per acre per year to gallons per square foot per year, LA is the total landscape area in square feet, SLA is the total special landscape area in square feet, and ETAF is .55 for residential areas and 0.45 for non-residential areas.

ETAF Calculations

Regular Landscape Areas

Total ETAF x Area	(B)
Total Area	(A)
Average ETAF	B ÷ A

Average ETAF for Regular Landscape Areas must be 0.55 or below for residential areas, and 0.45 or below for non-residential areas.

All Landscape Areas

Total ETAF x Area	(B+D)
Total Area	(A+C)
Sitewide ETAF	(B+D) ÷ (A+C)

ATTACHMENT 4

CERTIFICATE OF COMPLETION

This certificate is filled out by the project applicant upon completion of the landscape project.

PART 1. PROJECT INFORMATION SHEET

Date		
Project Name		
Name of Project Applicant	Telephone No.	
	Fax No.	
Title	Email Address	
Company	Street Address	
City	State	Zip Code

Project Address and Location:

Street Address		Parcel, tract or lot number, if available.
City		Latitude/Longitude (optional)
State	Zip Code	

Property Owner or his/her designee:

Name	Telephone No.	
	Fax No.	
Title	Email Address	
Company	Street Address	
City	State	Zip Code

Property Owner

“I/we certify that I/we have received copies of all the documents within the Landscape Documentation Package and the Certificate of Completion and that it is our responsibility to see that the project is maintained in accordance with the Landscape and Irrigation Maintenance Schedule.”

Property Owner Signature Date

Please answer the questions below:

1. Date the Landscape Documentation Package was submitted to the local agency _____
2. Date the Landscape Documentation Package was approved by the local agency _____
3. Date that a copy of the Water Efficient Landscape Worksheet (including the Water Budget Calculation) was submitted to the local water purveyor _____

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PART 2. CERTIFICATION OF INSTALLATION ACCORDING TO THE LANDSCAPE DOCUMENTATION PACKAGE

“I/we certify that based upon periodic site observations, the work has been completed in accordance with the ordinance and that the landscape planting and irrigation installation conform with the criteria and specifications of the approved Landscape Documentation Package.”

Signature*	Date	
Name (print)	Telephone No.	
	Fax No.	
Title	Email Address	
License No. or Certification No.		
Company	Street Address	
City	State	Zip Code

*Signer of the landscape design plan, signer of the irrigation plan, or a licensed landscape contractor.

PART 3. IRRIGATION SCHEDULING

Attach parameters for setting the irrigation schedule on controller per ordinance Section 492.10.

PART 4. SCHEDULE OF LANDSCAPE AND IRRIGATION MAINTENANCE

Attach schedule of Landscape and Irrigation Maintenance per ordinance Section 492.11.

PART 5. LANDSCAPE IRRIGATION AUDIT REPORT

Attach Landscape Irrigation Audit Report per ordinance Section 492.12.

PART 6. SOIL MANAGEMENT REPORT

Attach soil analysis report, if not previously submitted with the Landscape Documentation Package per ordinance Section 492.6.

Attach documentation verifying implementation of recommendations from soil analysis report per ordinance Section 492.6.