

LANDSCAPE DOCUMENTATION PACKAGE


 City of Redding
 777 Cypress Avenue
 Redding CA 96001
 Telephone:
 (530) 225-4013
 FAX: (530) 225-4360

WATER EFFICIENCY APPLICATION FORM

Project Name			
Project Location			
Building Permit Number		Planning File Number	
Landscape Contractor			
Contractor's City License Number		Contractor's State License Number	
Landscape Architect			
Landscape Architect's City License Number		Landscape Architect's State License Number	
Irrigation Designer			
Irrigation Designer's City License Number		Irrigation Designer's Certification/State License Number	

Included in this project submittal package are: (Check to indicate completion)

<input type="checkbox"/> Hydrozone Information Table (Section B1)	
<input type="checkbox"/> Hydrozone Map (Section B1)	
<input type="checkbox"/> Maximum Applied Water Allowance (Section B3)	gallons/year
<input type="checkbox"/> Maximum Applied Water Allowance (Section B3.b.) (If considering Effective Precipitation)	gallons/year
<input type="checkbox"/> Estimated Total Water Use (Section B4)	gallons/year
<input type="checkbox"/> Soil Management Report (from accredited soils lab)	
<input type="checkbox"/> Landscape Design Plan: (signature of authorized person required)	
<input type="checkbox"/> Plant Material	
<input type="checkbox"/> Water Features	
<input type="checkbox"/> Mulch and Amendments	
<input type="checkbox"/> Landscape Plan (signature of authorized person required)	
<input type="checkbox"/> Irrigation Design Plan (signature of authorized person required)	
<input type="checkbox"/> Irrigation System	
<input type="checkbox"/> Irrigation Design Plan Specifications	
<input type="checkbox"/> Grading Design Plan (signature of authorized person required)	

WATER EFFICIENCY APPLICATION - CERTIFICATIONS AND SIGNATURES

APPLICANT / REPRESENTATIVE - CERTIFICATION AND SIGNATURE

I have reviewed this application and the attached material. I agree to comply with the requirements of the Water Efficient Landscape Ordinance and submit a complete Landscape Documentation Package.

Signed _____

Date _____

PROPERTY OWNER / AUTHORIZED AGENT - CERTIFICATION AND SIGNATURE

I have read this application and consent to its filing. I agree to comply with the requirements of the Water Efficient Landscape Ordinance and submit a complete Landscape Documentation Package.

Signed _____

Date _____

LANDSCAPE PLAN - CERTIFICATION AND SIGNATURE

LICENSED LANDSCAPE ARCHITECT, LICENSED LANDSCAPE CONTRACTOR WHO IS A DESIGNER/BUILDER, OR ANY OTHER PERSON AUTHORIZED TO DESIGN A LANDSCAPE: *I complied with the criteria of the Water Efficient Landscape Ordinance and applied them for the efficient use of water in the landscape design plan.*

Signed _____

Date _____

IRRIGATION PLAN - CERTIFICATION AND SIGNATURE

LICENSED LANDSCAPE ARCHITECT, CERTIFIED IRRIGATION DESIGNER, LICENSED LANDSCAPE CONTRACTOR WHO IS A DESIGNER/BUILDER, OR ANY OTHER PERSON AUTHORIZED TO DESIGN A LANDSCAPE: *I complied with the criteria of the Water Efficient Landscape Ordinance and applied them for the efficient use of water in the irrigation design plan.*

Signed _____

Date _____

GRADING PLAN - CERTIFICATION AND SIGNATURE

Licensed Professional as authorized by law: *I complied with the criteria of the Water Efficient Landscape Ordinance and applied them for the efficient use of water in the grading design plan.*

Signed _____

Date _____

SECTION B2. WATER BUDGET CALCULATION. A water budget calculation for the landscape project shall be provided adhering to the following:

- a. For the Calculation of the Maximum Applied Water Allowance and Estimated Total Water Use, the following ETo values shall apply:

Reference Evapotranspiration (ETo) Table												
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual ETo
1.2	1.4	2.6	4.1	5.6	7.1	8.5	7.3	5.3	3.2	1.4	0.9	48.8

- b. The plant factor used shall be from the Water Use Classification of Landscape Species (WUCOLS) published by the University of California Cooperative Extension, the Department of Water Resources and the Bureau of Reclamation, 2000, which are as follows:
- i. Low water use plants = 0 to 0.3
 - ii. Moderate water use plants = 0.4 to 0.6
 - iii. High water use plants= 0.7 to 1.0
- c. 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.
- d. All Special Landscape Areas, which include 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, shall be identified and their water use calculated; the ET Adjustment Factor (ETAF) for all Special Landscape Areas shall not exceed 1.0.

SECTION B3. MAXIMUM APPLIED WATER ALLOWANCE (MAWA)

The project's Maximum Applied Water Allowance shall be calculated using the following formula:

$$\text{MAWA} = (\text{ETo})(0.62)[(0.7 \times \text{LA}) + (0.3 \times \text{SLA})]$$

Where:

- MAWA** = Maximum Applied Water Allowance (gallons per year)
- 0.62** = Conversion Factor
- 0.7** = ET Adjustment Factor
- LA** = Landscape Area includes Special Landscape Area (square feet)
- 0.3** = Additional Water Allowance for SLA
- SLA** = Special Landscape Area (square feet)
- ETo** = Reference Evapotranspiration (inches per year). The ETo for Redding is 48.8.

The following example is given to show how the MAWA is calculated using a hypothetical project with 3,450 square feet of landscaped area (**LA**) and 1,325 square feet of special landscaped area (**SLA**).

$$\begin{aligned} \text{MAWA} &= (48.8 \text{ inches})(0.62) [(0.7 \times 3,450) + (0.3 \times 1,325)] = \\ &48.8 \times 0.62 = 30.256 \times [(2,415) + (397.5)] = 30.256 \times 2812.5 = \mathbf{85,095 \text{ gallons/year}} \end{aligned}$$

Project MAWA Calculation A designer **may** choose to include Effective Precipitation to calculate MAWA, however it **is not required**. (fill in only one Section below: If Effective Precipitation is **NOT** being considered fill in Section B3. a. If Effective Precipitation **IS** being considered, fill in Section B3. b.)

Total Landscape Area (including Special Landscape Area) (**LA**) = _____ square feet

Special Landscape Area (**SLA**) = _____ square feet

Section B3. a.

SHOW CALCULATION:

$$\begin{aligned} (48.8 \text{ inches})(0.62) [(0.7 \times \underline{\hspace{2cm}}) + (0.3 \times \underline{\hspace{2cm}})] &= \underline{\hspace{2cm}} \\ &\quad \quad \quad \text{(LA)} \quad \quad \quad \text{(SLA)} \\ 30.256 \times [(\underline{\hspace{2cm}}) + (\underline{\hspace{2cm}})] &= 30.256 \times \underline{\hspace{2cm}} = \underline{\hspace{2cm}} \text{ gallons/year} \end{aligned}$$

Section B3. b. EFFECTIVE PRECIPITATION (EPPT) If considering Effective Precipitation, use 25% of annual precipitation. Use the following equation to calculate Maximum Applied Water Allowance:

$$\text{MAWA} = (\text{ETo} - \text{Eppt})(0.62)[(0.7 \times \text{LA}) + (0.3 \times \text{SLA})]$$

SHOW CALCULATION:

$$\begin{aligned} (48.8 \text{ inches} - \underline{\hspace{2cm}})(0.62) [(0.7 \times \underline{\hspace{2cm}}) + (0.3 \times \underline{\hspace{2cm}})] &= \underline{\hspace{2cm}} \\ &\quad \quad \quad \text{(Eppt)} \quad \quad \quad \text{(LA)} \quad \quad \quad \text{(SLA)} \\ (\underline{\hspace{2cm}})(0.62) = \underline{\hspace{2cm}} \times [(\underline{\hspace{2cm}}) + (\underline{\hspace{2cm}})] &= \underline{\hspace{2cm}} \text{ gallons/year} \end{aligned}$$

SECTION B3. ESTIMATED TOTAL WATER USE (ETWU)

The project's Estimated Total Water Use shall be calculated using the formula below. **The sum of the Estimated Total Water Use calculated for all hydrozones shall not exceed the project's MAWA. (ETWU < MAWA)**

$$ETWU = (ETo)(0.62) \left(\frac{PF \times HA}{IE} + SLA \right)$$

Where:

- ETWU** = Estimated Total Water Use per year (gallons)
- ETo** = Reference Evapotranspiration (inches per year). The ETo for Redding is 48.8.
- PF** = Plant Factor from WUCOLS
- HA** = Hydrozone Area [high, medium, and low water use area] (square feet)
- SLA** = Special Landscape Area (square feet)
- 0.62** = Conversion Factor
- IE** = Irrigation Efficiency (minimum 0.71)

The following example is given to show how the ETWU is calculated using a hypothetical project with 3,450 square feet of landscape area, 1,325 square feet of which is planted with edible plants. The edible plant area is considered a Special Landscape Area (**SLA**). The plant type, plant factor, and hydrozone area are shown in the table below.

Hydrozone	Plant Water Use Type(s)	Plant Factor (PF)*	Hydrozone Area (HA) (square feet)	PF x HA (square feet)
1	High	0.8	300	240
2	High	0.7	200	140
3	Medium	0.5	325	162.5
4	Low	0.3	600	180
5	Low	0.2	700	140
			Sum	862.5
6	SLA	1.0	1,325	1,325
		TOTAL	3,450	

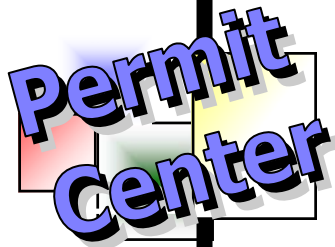
$$\begin{aligned}
 ETWU &= (48.8)(0.62) \left(\frac{862.5}{0.71} + 1,325 \right) \\
 &= (30.26) (1,214.79 + 1,325) \\
 &= \mathbf{76,854 \text{ gallons per year}}
 \end{aligned}$$

Compare ETWU with MAWA - (Remember: the project's ETWU shall not exceed the project's MAWA):

For this example: MAWA = (48.8)(0.62)[(0.7 x 3,450) + (0.3 x 1,325)] = 85,095 gallons per year

76,854 gallons per year < 85,095 gallons per year
(ETWU) (MAWA)

In this example, the water budget complies with the MAWA. **(ETWU < MAWA)**



LANDSCAPE CERTIFICATE OF COMPLETION

REDDING
CALIFORNIA
City of Redding
777 Cypress Avenue
Redding CA 96001
Telephone:
(530) 225-4013
FAX: (530) 225-4360

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

Part 1. Project Information

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

Project Address and Location

Street Address:		
City:	Latitude / Longitude (optional):	
State:	Zip Code:	
Parcel, Tract or Lot Number (if available):		

Property Owner or His/Her Designee:

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

Documentation Dates

Submittal Date of the Landscape Documentation Package	
Approval Date of the Landscape Documentation Package	

Property Owner / Authorized Agent: *"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."*

Signed _____ Date _____

Part 2. Certification of Installation According to the Landscape Documentation Package

Signer of the landscape design plan, signer of the irrigation plan or a licensed landscape contractor: *“I/We certify that based upon periodic site observations, the work has been substantially 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.”*

If appropriate, please check the following:

- Significant changes have been made in the field during construction, the required “as-built” or record drawings are attached with this certification.

Signed _____

Date _____

Name of Signer (print) :		Telephone No.:	
		Fax No.:	
Title:		Email Address:	
License No. or Certification No.			
Name of Company:		Street Address:	
City:	State:	Zip Code:	

Attachments Required

- Part 3. Irrigation Scheduling.** Attach parameters for setting the irrigation schedule on controller per Section 16.70.070.
- Part 4. Schedule of Landscape and Irrigation Maintenance.** Attach schedule of Landscape and Irrigation Maintenance per Section 16.70.080.
- Part 5. Landscape Irrigation Audit Report.** Attach Landscape Irrigation Audit Report per Section 16.70.090.
- Part 6. Soil Management Report.** Attach soil analysis report, if not previously submitted with the Landscape Documentation Package per Section 16.70.050.C. Attach documentation verifying implementation of recommendations from soil analysis report per Section 16.70.050.C.2.