



**WELO WORKSHEETS  
LANDSCAPE MANUAL  
APPENDIX E  
P-25(C)**

*Development Services*

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## WATER EFFICIENT LANDSCAPE WORKSHEET

This worksheet is filled out by the project applicant and it is a required element of the Landscape Documentation Package.

### 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.

| Controller # | Hydrozone* | Zone or Valve | Irrigation Method** | Plant Type/Factor*** (PF) | Hydrozone Area (Sq. Ft.) | % of Total Landscaped Area |
|--------------|------------|---------------|---------------------|---------------------------|--------------------------|----------------------------|
|              |            |               |                     |                           |                          |                            |
|              |            |               |                     |                           |                          |                            |
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|              |            |               |                     |                           |                          |                            |
|              |            |               |                     |                           |                          |                            |
|              |            | <b>Total</b>  |                     |                           |                          | <b>100%</b>                |

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

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

\*\*\*Plant Factor from WUCOLS III or list as water feature as appropriate

**MAXIMUM APPLIED WATER ALLOWANCE**

A landscape project subject to the Water Efficient Landscape Ordinance shall include the MAWA for the plans, including the calculations used to determine the MAWA. A landscape project shall not exceed the MAWA. The MAWA for a landscape project shall be determined by the following equations:

**Residential:**                      **MAWA = (ETo)(0.62)[(0.55 x LA) + (0.45 x SLA)]**

**Commercial/Industrial:**      **MAWA = (ETo)(0.62)[(0.45 x LA) + (0.55 x SLA)]**

*The abbreviations used in the equation have the following meanings:*

|                   |  |
|-------------------|--|
| MAWA              | Maximum Applied Water Allowance in gallons per year.                                       |
| ETo               | Evapotranspiration in inches per year.   |
| 0.62              | Conversion factor to gallons per square foot.  |
| 0.55/0.45 (x LA)  | ET adjustment factor (ETAF) for plant factors and irrigation efficiency.                   |
| LA                | Landscaped area includes special landscaped area in square feet.                           |
| 0.45/0.55 (x SLA) | The additional ET adjustment factor for a special landscaped area (eg, 1.0 - 0.55 = 0.45). |
| SLA               | Special landscaped area in square feet.  |

**Show Calculation:**

**MAXIMUM APPLIED WATER ALLOWANCE = \_\_\_\_\_ GALLONS PER YEAR**

## **ESTIMATED TOTAL WATER USE**

A landscape project subject to the Water Efficient Landscape Ordinance shall include the ETWU for the plans, including the calculations used to determine the ETWU. The ETWU for a proposed project shall not exceed the MAWA. The following equation shall be used to calculate the ETWU for each landscaped area and the entire project:

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

*The abbreviations used in the equation have the following meanings:*

|      |   |
|------|---|
| ETWU | Estimated total water use in gallons per year.  |
| ETo  | Evapotranspiration in inches per year.  |
| 0.62 | Conversion factor to gallons per square foot.   |
| PF   | Plant factor from WUCOLS III  |
| HA   | Hydrozone Area in square feet. Each HA shall be classified based upon the data included in the landscape and irrigation plan as high, moderate, low, or very low water use. |
| IE   | Irrigation Efficiency of the irrigation method used in the hydrozone.   |
| SLA  | Special landscaped area in square feet.   |

### Hydrozone Table for Calculating ETWU

Please complete the hydrozone table(s). Use as many tables as necessary.

| CITY OF CARLSBAD ESTIMATED TOTAL WATER USE (ETWU)   |                          |   |   |   |   |   |     |  |
|---|--------------------------|---|---|---|---|---|-----|--|
|   |                          | Hydrozone Number (1 – 5 with SLA Zone Below – use as many tables as necessary to complete all hydrozones) |   |   |   |   |     |  |
|   | Process Step No. (Below) | 1   | 2 | 3 | 4 | 5 | SLA |  |
| Evapotranspiration Rate (ETo)*  | 1                        |   |   |   |   |   |     |  |
| Conversion Factor   | 2                        | 0.62  |   |   |   |   |     |  |
| (Step 1 x Step 2)   | 3                        |   |   |   |   |   |     |  |
| Plant Factor (PF)** (From WUCOLS) (VLW – HW) (0.1 - 0.8)  | 4                        |   |   |   |   |   |     |  |
| Area of Hydrozone (sq. ft.) (HA)  | 5                        |   |   |   |   |   |     |  |
| (Step 4 x Step 5)   | 6                        |   |   |   |   |   |     |  |
| Irrigation Efficiency (IE)***   | 7                        |   |   |   |   |   |     |  |
| (Step 6 ÷ Step 7)   | 8                        |   |   |   |   |   |     |  |
| (Total All Step 8 + Total SLA sq. ft. in Step 5)  | 9                        |   |   |   |   |   |     |  |
| (Step 3 x Step 9)<br>Estimated Total Water Use in gallons per year (ETWU) - Total shall not exceed MAWA | 10                       |   |   |   |   |   |     |  |

**ETo\***

West of I-5 = 40.0  
 East of I-5 and West of El Camino Real = 44.0  
 East of El Camino Real = 47.0  
 Applicant may provide a different ETo if supported by documentation subject to approval by the City Planning Division

**\*\*\*IE**

Micro-spray = .80  
 Spray = .55  
 Rotor = .70  
 Bubbler = .75  
 Drip = .80  
 Applicant may provide a different IE if supported by documentation subject to approval by the City Planning Division (Turf and Landscape Irrigation Best Management Practices, April 2005)

**\*\* Plant Factor & Water Use**

0.1 = VLW - Very Low Water Use Plants  
 0.3 = LW - Low Water Use Plants  
 0.5 = MW - Moderate Water Use Plants  
 0.8 = HW - High Water Use Plants