

**Planning and Building Agency Planning Division** 20 Civic Center Plaza P.O. Box 1988 (M-20) Santa Ana, CA 92702 (714) 647-5804 www.santa-ana.org

## **WATER EFFICIENT** LANDSCAPE WORKSHEET

This worksheet is filled out by the project applicant and it is a required item of the Landscape

| I   | Documentation Package.  Reference Evapotranspiration (ETo) <sup>a</sup> : 47.8 |          |                                      |                                   |   |                 | Landscape Area Sector Type (Select one):  Residential (0.55) Non-Residential (0.45) |                |   |  |
|---|--|----------|--------------------------------------|-----------------------------------|---|-----------------|---|----------------|---|--|
|   | Hydrozone<br>#/Planting<br>Description   | Location | Plant<br>Factor <sup>b</sup><br>(PF) | Irrigation<br>Method <sup>c</sup> | Irrigation<br>Efficiency <sup>c</sup><br>(IE) | ETAF<br>(PF/IE) | Landscape<br>Area<br>(sq-ft)  | ETAF x<br>Area | Estimated<br>Total<br>Water<br>Used<br>(ETWU) |  |
| Regula  | ar Landscape   | Area     |                                      |                                   |   |                 |   |                |   |  |
| 1   |  |          |                                      |                                   |   |                 |   |                |   |  |
| 2   |  |          |                                      |                                   |   |                 |   |                |   |  |
| 3   |  |          |                                      |                                   |   |                 |   |                |   |  |
| 4   |  |          |                                      |                                   |   |                 |   |                |   |  |
| 5   |  |          |                                      |                                   |   |                 |   |                |   |  |
| 6   |  |          |                                      |                                   |   |                 |   |                |   |  |
| 7   |  |          |                                      |                                   |   |                 |   |                |   |  |
| 8   |  |          |                                      |                                   |   |                 |   |                |   |  |
| 9   |  |          |                                      |                                   |   |                 |   |                |   |  |
| 10  |  |          |                                      |                                   |   |                 |   |                |   |  |
| 11  |  |          |                                      |                                   |   |                 |   |                |   |  |
| 12  |  |          |                                      |                                   |   |                 |   |                |   |  |
|   |  |          |                                      |                                   |   | Average         | Total   | Total          |   |  |
|   |  |          |                                      |                                   |   | -               |   |                |   |  |
|   | Average ETAF for In Regular Landscape Areas <sup>e</sup> (circle one):         |          |                                      |                                   |   |                 | Not In<br>Compliance  |                |   |  |
|   | l Landscape  | Area     |                                      |                                   |   |                 |   |                |   |  |
| SLA-1   |  |          |                                      |                                   |   |                 |   |                |   |  |
| SLA-2   |  |          |                                      |                                   |   |                 |   |                |   |  |
| SLA-3   |  |          |                                      |                                   |   |                 |   |                |   |  |
| SLA-4   |  |          |                                      |                                   |   |                 |   |                |   |  |
| SLA-5   |  |          |                                      |                                   |   |                 |   |                |   |  |
|   |  |          |                                      |                                   |   | Totals          |   |                |   |  |
| Total Landscape Area                                |  |          |                                      |                                   |   |                 |   |                |   |  |
| Site wide ETAF                                      |  |          |                                      |                                   |   |                 |   |                |   |  |
|   |  |          |                                      |                                   |   |                 |   | ETWU Total     |   |  |
| Maximum Allowed Water Allowance (MAWA) <sup>f</sup> |  |          |                                      |                                   |   |                 |   |                |   |  |

## **WORKSHEET INFORMATION & EQUATIONS**

<sup>&</sup>lt;sup>b</sup> The following table can be used for common plant factors:

| Plant Factor                      | PF  |
|-----------------------------------|-----|
| Very low water use plant          | 0.1 |
| Low water use plant               | 0.2 |
| Medium water use plant            | 0.5 |
| High water use plant              | 0.8 |
| Lawn                              | 8.0 |
| Pool, spa, or other water feature | 1.0 |

<sup>&</sup>lt;sup>c</sup> *Irrigation efficiency* is derived from measurements and estimates of irrigation system characteristics and management practices. The minimum average *irrigation efficiency* for purposes of these *Guidelines* is 0.71. The following *irrigation efficiency* may be obtained for the listed irrigation heads with an *Irrigation Management Efficiency* of 90%:

| Irrigation Method             | IE  |
|-------------------------------|-----|
| Spray nozzles                 | 71% |
| High efficiency spray nozzles | 73% |
| Multi stream/Multi trajectory | 76% |
| rotary (MSMT) nozzles         |     |
| Stream rotor nozzle           | 73% |
| Microspray                    | 76% |
| Bubblers                      | 77% |
| Drip emitter                  | 81% |
| Subsurface drip               | 81% |

<sup>&</sup>lt;sup>d</sup> Estimated Total Water Use (ETWU) is the annual gallons required ETWU = (ETo) x (0.62) x (ETAF x Area)

where, ETo = annual evapotranspiration rate in inches per year 0.62 = factor used to convert inches per year to gallons per square foot ETAF = plant factor ÷ irrigation efficiency

Where, ETo = annual evapotranspiration rate in inches per year

0.62 = factor used to convert inches per year to gallons per square foot

ETAF = plant factor ÷ irrigation efficiency

LA = total (site wide) landscape area in square feet

SLA = total special landscape area

<sup>&</sup>lt;sup>a</sup> Local monthly evapotranspiration rates are listed in Appendix D.

<sup>&</sup>lt;sup>e</sup> Average ETAF for Regular Landscape Areas must be 0.55 or below for residential areas, and 0.45 or below for nonresidential areas.

f Maximum Allowed Water Allowance (MAWA) is the annual gallons allowed MAWA = (ETo) x (0.62) x [(ETAF x LA) + ((1-ETAF) x SLA)]